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VIRUS PNEUMONIA OF PIGS

The Effect of the Disease upon Growth and Efficiency of Food Utilisation

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INTRODUCTION

In an earlier paper (Betts, 1952) it was pointed out that pigs affected with "Virus Pneumonia of Pigs" (V.P.P.) did not thrive as well as normal pigs. Although in some affected pigs retardation of growth was marked, in the majority the effects of the disease were not obvious. Attention was drawn to the fact that, although the effect on individual pigs might be small, the incidence of the disease was so high that the resultant economic loss to the country must be considerable. The observations on natural cases and the experimental findings which are reported in the following paper support this belief and, in fact, suggest that the importance of the disease is far greater than was originally realised.

MATERIALS AND METHODS

Source of Virus.—For the experimental work, the M.R. strain of virus was used. This strain was isolated in June, 1951, from a herd of pedigree Essex pigs in which V.P.P. had been endemic for some years. The virus had been maintained, subsequent to isolation, by passage through pigs, and by storage at -30° C. between passages.

Source of Experimental Pigs and their Distribution between Groups.—The experimental pigs were weaners, eight weeks of age, drawn from litters born within 24 hours of each other. Two experiments were undertaken, one under summer conditions and the other under winter conditions, and in each experiment 16 pigs were used. For the winter experiment, eight pigs were taken from each of two Essex × Large White cross-bred litters of this Department's herd, which is free from V.P.P. No litters born within 24 hours of each other were available in this herd for the summer experiment, therefore pure-bred Essex weaners were obtained from three litters from another small "closed" herd known to be free from the disease.

The 16 pigs in each experiment were divided into two groups of eight, one of which was infected while the other was left as a control. To distribute pigs between infected and control groups, members of each litter used were weighed, their weights arranged in descending order, and the pigs allocated alternately to the two groups. If the heaviest pig of the first litter was put into one group then the heaviest pig of the next litter was put into the other group. In this way two groups of litter-mates of very similar total weights were obtained.

The distribution of the Essex pigs between the two groups in the summer experiment is illustrated below.

Litter	Pig number	Weight in lb.	Group
B	B1	45	Infected
	B2	44	Control
	B3	44	Infected
	B4	42	Control
	B5	41	Infected
	B6	38	Control
	B7	38	Infected
	B8	36	Control
C	C1	46	Control
	C2	45	Infected
	C3	43	Control
	C4	42	Infected
	C5	40	Control
	C6	37	Infected
A	A1	37	Control
	A2	37	Infected

Method of Infection.—Pigs were infected with suspensions of pneumonic lung prepared by grinding the tissue in a Craigie grinder and then suspending in it phosphate buffer, *p*H 7·2, to give a final dilution of 10^{-4}.

After anaesthetisation with nembutal by intraperitoneal injection, each pig of the "infected group" was injected with 20 ml. of the suspension. The injection was made slowly into the lumen of the trachea while the pig was held in a vertical position; 20 ml. of the suspension used contained an amount of virus of the order of 10 infective doses.

The control pigs were not injected with suspensions of normal lung since previous experience had shown that anaesthetisation and the injection of even concentrated suspensions of non-infective tissue into the trachea of normal pigs had no effect upon them.

Management of the Pigs after Infection.—The two groups of pigs in each experiment were housed under identical conditions in concrete-lined, cattle isolation boxes which, although satisfactory in summer, proved to be cold in winter. Although there was a separate attendant for each group the management was the same for each.

In the first experiment, which was in summer, the infected pigs were fed to appetite and the controls received the same amount of food. This did not appear to satisfy the control pigs, which were growing more rapidly, so in the winter experiment the amount of food given to each group was based upon the average weight of members of the group. The ration scale used was computed from the daily consumption of the infected pigs in the summer experiment and was as follows.

Weight of pigs in lb.	Amount of food in lb. fed to each pig per day
20– 30	2
30– 50	2½
50– 70	3
70– 80	3½
80–100	4
100–110	4½
110–130	5
130–140	5½
140–160	6
160–170	6½
170–190	7
190–	7½

The ration used was one of the standard rations in use in the Department's herd. Its composition was :—

Barley meal ...	...	40 per cent.
Millers offals	...	30 „
Maize meal ...	...	20 „
White fish meal	...	10 „

Food was fed damp ; half the daily ration was given in the morning and half in the afternoon. Water was available *ad lib.*

Recording of Results.—The pigs were examined at least twice daily for coughing and other symptoms. These were recorded, and any inappetence at feeding times was also noted. The temperature of any pig which appeared to be ill was recorded.

All the pigs were weighed once weekly before the morning feed was given. The daily amount of food given to each group was measured and the amount for the week thus calculated.

Pigs were removed from the experiments when their weights exceeded 200 lb. As soon as possible after reaching 200 lb. weight, all the pigs, except some gilts in the control groups, were slaughtered and their lungs examined. Some of the normal gilts were, however, retained for breeding purposes.

RESULTS

Summer Experiment

Throughout the period of experiment no coughing was detected among pigs of the control group, but the first pig of the infected group began coughing on the 19th day and within the next five days all eight pigs had begun to cough. In general, the incidence of coughing appeared to be correlated with the degree of unthriftiness, and this, in turn, with the extent of lesions found at slaughter. The incidence of coughing and the extent of lesions at autopsy is illustrated in Fig. 1.

The control pigs grew regularly and well and there was little variation in weight between members of the group. At the beginning of the experiment there was a range of 10 lb. between the largest and smallest pigs of the group, while 16 weeks later, the last weighing at which all the pigs were under 200 lb., the range was only 29 lb. despite the fact that the pigs were from three different litters. The first pig of the group to reach 200 lb. did so on the 113th day after the experiment began and the last on the 133rd day. The average growth-rate was 1·29 lb. per day.

In the infected group growth was very irregular. There were periods of little or no growth and even periods when the pigs lost weight. During these periods the pigs developed varying degrees of inappetence but, although breathing was sometimes laboured, " thumping " was seen only occasionally. Rectal temperature at such times was usually in excess of 104·5° F. The range of weights within the group at the beginning of the experiment was 8 lb., whereas 17 weeks later it was 66 lb. The first pig of the group reached 200 lb. after 121 days but the last pig took 203 days. The average growth-rate was 1·11 lb. per day. The growth-curves of these two groups of pigs are shown in Figs. 2 and 3.

In spite of their irregular growth-rates and periods of intermittent fever, the infected pigs usually appeared normal upon ordinary clinical examination. Pig B1, illustrated in Fig. 4, was the most severely affected pig in the experiment, yet even this pig did not appear to be very sick although it lacked the sleekness of coat and rotundity of ham of its normal litter-mate, B2, illustrated in Fig. 5. The effects of the

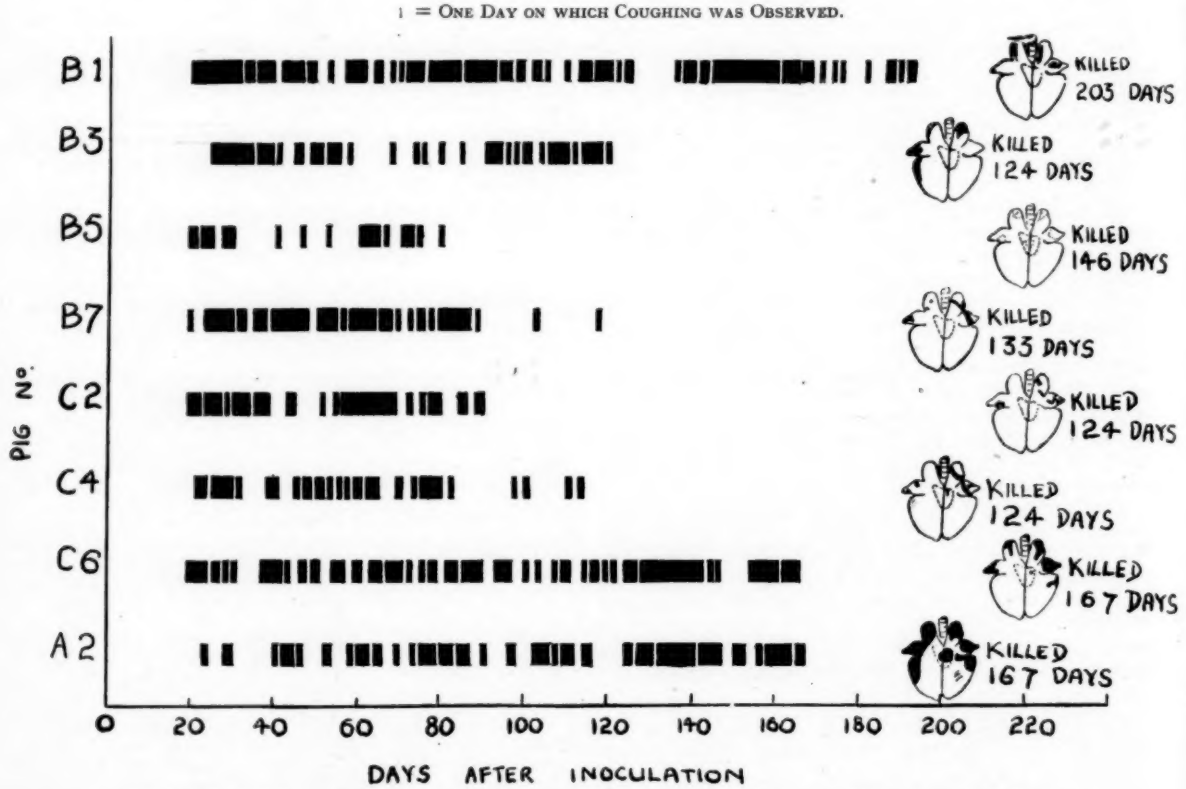

Fig. 1.—The incidence of coughing and the lesions at autopsy in the infected pigs of the summer experiment.

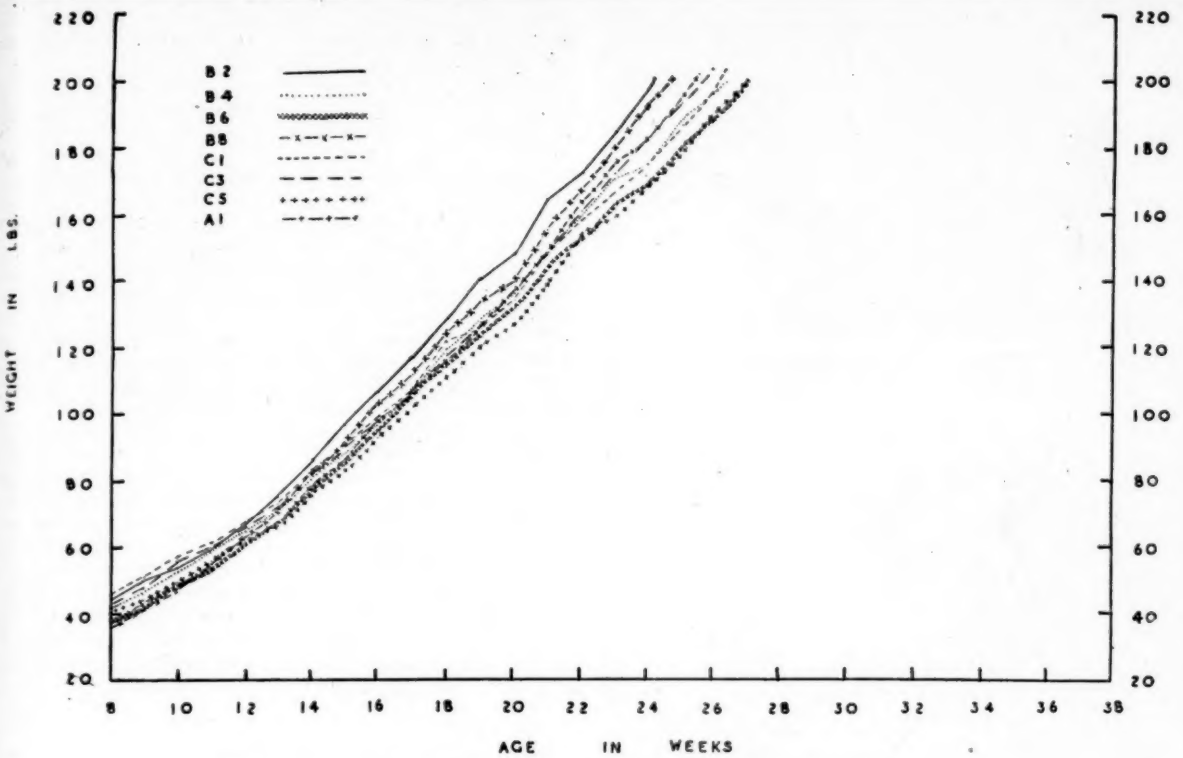

Fig. 2.—The growth-curves of the control pigs in the summer experiment.

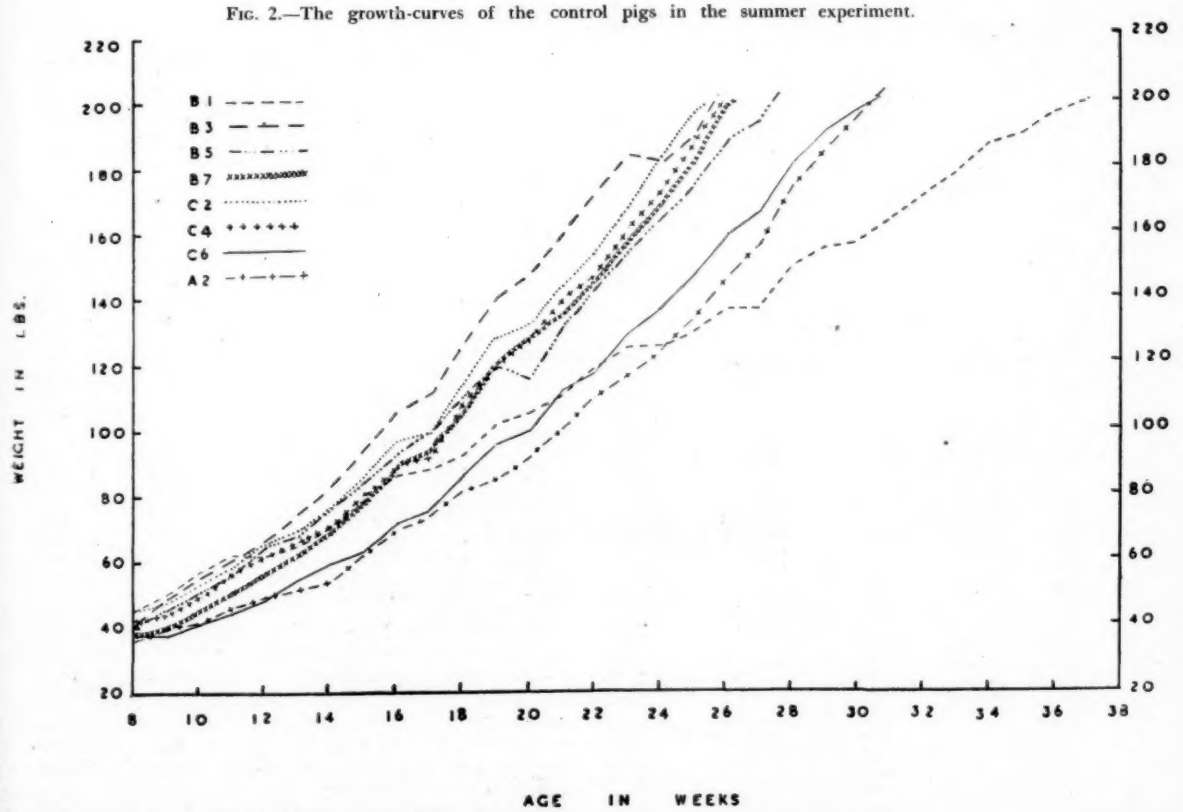

Fig. 3.—The growth-curves of the infected pigs in the summer experiment.

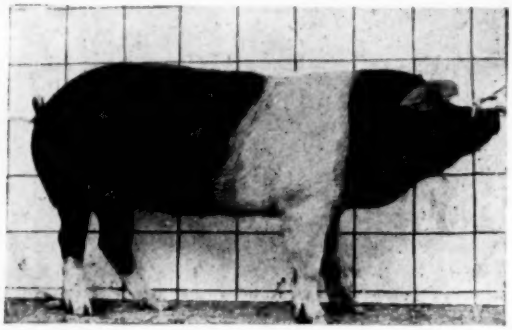

Fig. 4.—Pig B1, the most severely affected pig in the infected group of the summer experiment. Weight 126 lb., age 24 weeks.

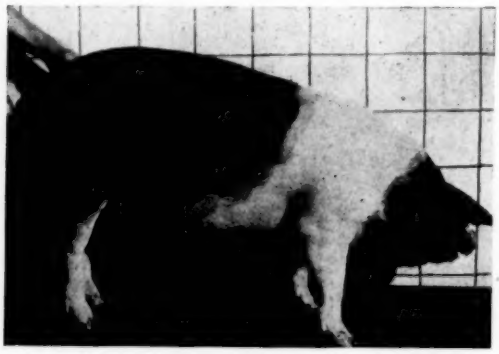

Fig. 5.—Pig B2, the normal litter-mate control for B1. Weight 198 lb., age 24 weeks.

Table I

Week of experiment	Age in weeks	Infected group		Control group	
		Average weight in lb.	Cumulative conversion rate	Average weight in lb.	Cumulative conversion rate
0	8	41·1	—	40·8	—
1	9	44·1	5·00	45·7	3·00
2	10	49·1	4·06	51·7	2·95
3	11	54·5	3·74	57·0	3·09
4	12	59·2	3·72	63·9	2·92
5	13	63·6	3·78	70·1	2·89
6	14	70·1	3·71	80·7	2·70
7	15	78·7	3·52	89·0	2·74
8	16	87·7	3·42	99·5	2·70
9	17	91·4	3·72	108·5	2·76
10	18	103·5	3·54	120·2	2·78
11	19	113·7	3·53	129·1	2·90
12	20	118·5	3·76	137·1	3·02
13	21	129·5	3·73	150·7	3·00
14	22	138·5	3·82	161·6	3·07
15	23	149·9	3·80	172·2	3·15
16	24	157·5	3·91	180·5	3·26
17	25	167·3	4·00	———	3·30
18	26	———	3·96	First pig	3·37
19	27	First pig	4·04	reached	3·39
20	28	reached	4·00	200 lb.	———
21	29	200 lb.	4·05	and	All pigs over
22	30	and	4·12	removed	200 lb.
23	31	removed	4·15		
24	32		4·17		
25	33		4·19		
26	34		4·20		
27	35		4·22		
28	36		4·24		
29	37		4·25		

disease in the remaining pigs of the group were clinically far less obvious.

As striking as the difference between the growth-rates of the two groups of pigs in this experiment was the difference in efficiency of food utilisation. This is illustrated by Table I, which gives the cumulative conversion rates and average weights of the control group and the infected group at weekly intervals.

Over the whole period from weaning to 200 lb., the control pigs required 3·39 lb. of food to produce 1 lb. live-weight gain whereas the infected pigs needed 4·25 lb. Thus the infected pigs needed over 25 per cent. more food than the controls.

It was feared at one time that pigs growing as rapidly as those in the V.P.P.-free group might not reach top bacon grade, but, in fact, when the barrows were killed they were classed as Grade A.

Winter Experiment

Except that cross-bred pigs were used and feeding was based upon the average weight of pigs in each group, the winter experiment was a replica of the summer experiment. During the course of the experiment the weather was, at times, severe and the cattle-boxes in which the pigs were housed proved to be very cold and draughty.

The differences between the figures for the controls and those for the infected pigs were more marked than in the summer experiment. Table II illustrates these points.

Table II

Week of experiment	Age in weeks	Infected group		Control group	
		Average weight in lb.	Cumulative conversion rate	Average weight in lb.	Cumulative conversion rate
0	8	44·7	—	44·1	—
1	9	48·2	4·14	49·5	2·70
2	10	51·0	4·65	56·0	2·71
3	11	56·8	3·85	59·4	3·21
4	12	61·5	3·80	67·8	3·04
5	13	66·7	3·81	72·7	3·24
6	14	72·1	3·85	82·5	3·06
7	15	78·5	3·86	91·5	3·05
8	16	84·0	3·94	98·0	3·20
9	17	90·5	3·98	108·4	3·17
10	18	97·7	3·97	116·2	3·28
11	19	99·0	4·39	126·0	3·31
12	20	105·0	4·42	134·5	3·39
13	21	109·0	4·64	144·7	3·43
14	22	118·3	4·48	153·9	3·51
15	23	126·2	4·47	163·3	3·59
16	24	132·3	4·56	175·1	3·62
17	25	139·5	4·61	———	3·68
18	26	147·1	4·66	First pig	3·69
19	27	155·1	4·71	reached	3·74
20	28	162·5	4·75	200 lb.	3·77
21	29	172·5	4·72	and	3·81
22	30	184·9	4·75	removed	3·82
23	31	———	4·82		3·84
24	32	First pig	4·82		3·85
25	33	reached	4·87		———
26	34	200 lb.	4·88		
27	35	and	4·90		
—	—	removed	———		

The average growth-rate of the normal group was 1·19 lb. per day, and the overall conversion rate 3·85 lb. of food per 1 lb. live-weight gain whereas the average growth-rate of the infected group was 0·92 lb. per day at an overall conversion rate of 4·90. The most marked effects upon the infected pigs were during the 11th and 13th weeks of the experiment when the pigs were 19 and 21 weeks of age. Growth was very poor and some pigs lost weight. This was reflected in the weekly conversion rates, which were 20·4 and 7·7 for the two weeks respectively. In spite of these effects, clinically it was difficult

to appreciate that the infected pigs were diseased. Rather surprisingly, the incidence of coughing in the infected group was noticeably less than in the summer experiment, and unevenness within this group was much less obvious.

Field Observations

Extensive field observations suggested that the effects of V.P.P. upon growth-rates and food utilisation as shown in the above experiments were by no means abnormal and that under natural conditions the effects were frequently more severe. The effects of the disease in endemically affected herds were sometimes masked by the widespread practice of culling at weaning and again a few weeks later. If culling had been applied to the pigs of the infected group in the first experiment (Fig. 3), the growth-rates of the remaining pigs would have been almost as good as those of the controls.

The severity of the effects of the disease appeared to depend to a large extent upon the environment and management. The effects were usually minimised, but not eliminated, by keeping pigs under warm, dry, conditions with adequate food, while under bad conditions the disease sometimes caused extreme stunting.

Even under good conditions, however, in some cases the effects upon growth-rates were quite serious. This is illustrated in Figs. 6 and 7 (over-leaf), which are the growth-curves of two groups of pigs in two feeding trials at two different research stations. The trials were done in summer and Large White pigs were used, but in neither case did the growth-rates of these pigs equal those of the infected Essex pigs in the summer experiment described above (Fig. 3). The most spectacular effects were at 19 to 24 weeks of age, when many of the pigs actually lost weight. This also occurred in two of the pigs in the experiment illustrated in Fig. 3. The setback in those two pigs was associated with fever, inappetence, laboured breathing and sometimes with "thumps" and prostration. This phenomenon, which occurs most frequently within the age groups mentioned, has been described previously (Betts, 1952). It appears to be associated with an extension of earlier lesions and with the proliferation of secondary organisms. The name "secondary breakdown" has been applied to the condition.

Discussion

The experiments and field observations quoted above, coupled with the figures of the incidence of the disease given in an earlier paper (Betts, 1952), suggest that V.P.P. is of considerably greater importance than previously realised. The effects of the disease were less severe in the summer experiments, and if these results are taken, a very rough idea of the overall annual loss to the pig industry caused by V.P.P. can be obtained.

For a given amount of food, the uninfected pigs in that experiment produced approximately 25 per cent. more live-weight gain than did the infected pigs.

$$\frac{4{\cdot}25 - 3{\cdot}39}{3{\cdot}39} \times 100 = 25 \text{ per cent.}$$

Calculating on this figure and assuming that only 50 per cent. of pigs in the country are affected, *i.e.*, the percentage of pigs with actual lesions at slaughter (Betts, 1952), this gives an economic loss of 12½ per cent. of the annual pig

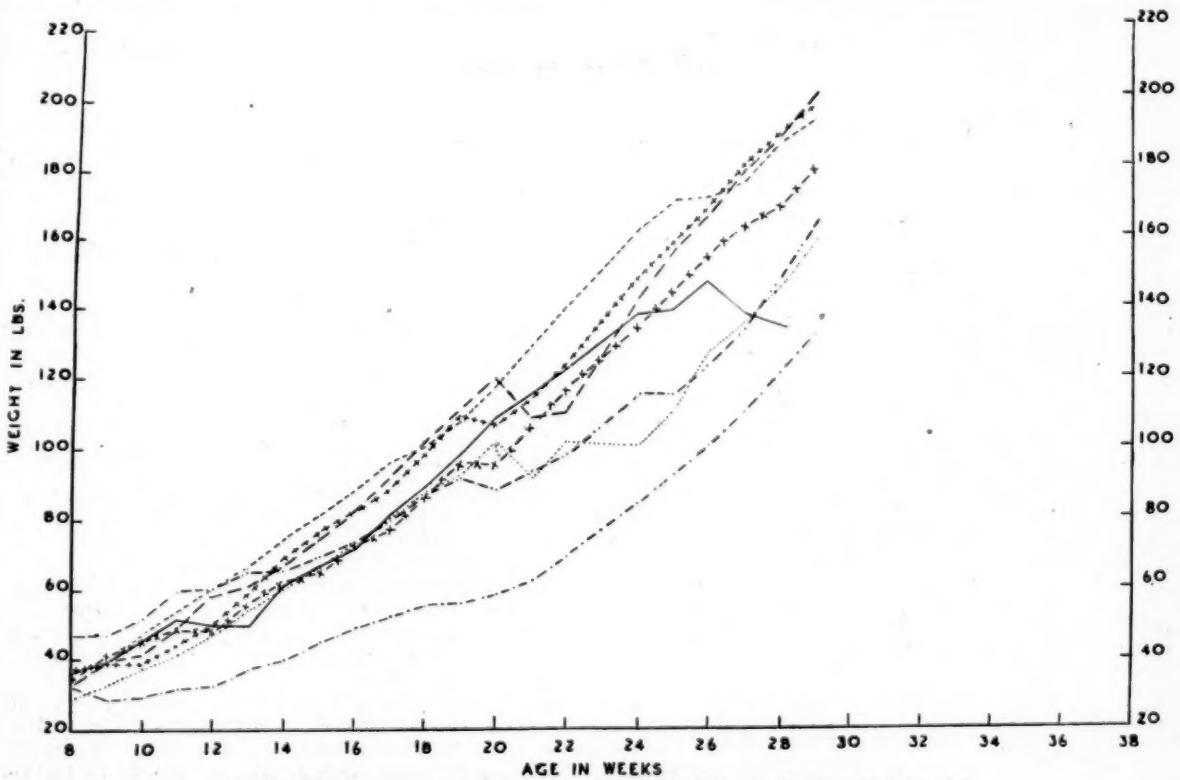

Fig. 6.—The growth-curves of a group of naturally-infected pigs in a feeding trial.

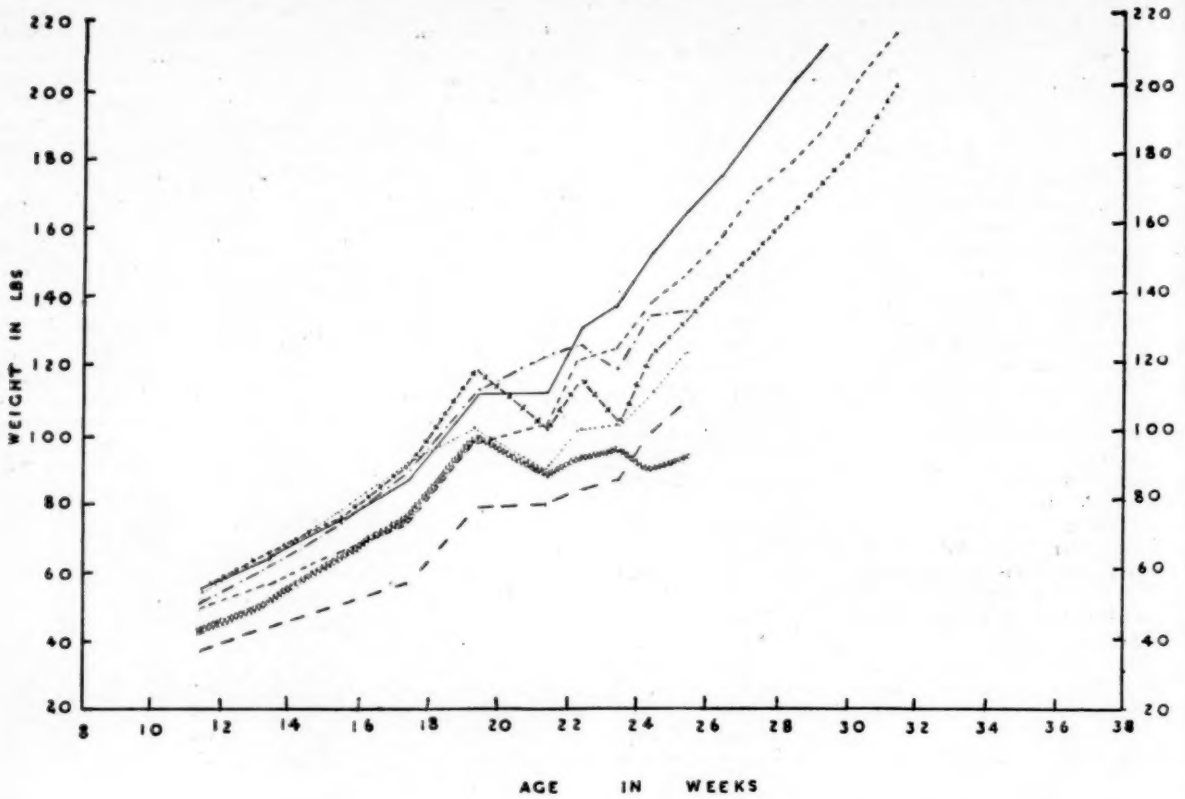

Fig. 7.—The growth-curves of another group of pigs at another research station. These curves illustrate well the effects of "secondary breakdowns" on growth.

production of the country. During 1952 pigs to the value of £125,000,000 were sold to the Ministry of Food so the loss would be :—

$$£\frac{12{\cdot}5}{100} \times 125\text{ M} \simeq £15{,}600{,}000.$$

Obviously, this can only be regarded as a very rough estimate of the economic loss caused by the disease and it may even be an under-estimate for it takes no account of pigs actually dying from the disease. If, as seems probable, the disease has a world-wide distribution the total loss from the disease must be many times this figure.

It is important that further experiments on a larger scale be undertaken to determine definitely whether the effects of the disease upon growth-rates and food utilisation as obtained in these experiments have a general application. Such experiments are now in progress in collaboration with the Agricultural Research Council.

Another important aspect of the disease is the effect it has upon experimental work, since a high proportion of the herds at stations in Britain where nutritional and breeding trials are being undertaken are infected. The growth-curves shown in Figs. 6 and 7 were of pigs in feeding trials at two important research stations. The variability of infected pigs makes the disease a nuisance and may necessitate the use of larger numbers than would otherwise be required.

V.P.P. is an important factor to be considered in progeny-testing particularly under British conditions. It is of interest to note the observations of Nordfeldt, Oloffson & Swahn (1949), who examined the lungs of the majority of pigs officially tested in Sweden between 1944 and 1947. They found that 85 per cent. of the lungs they examined had lesions of pneumonia. They also remarked that pneumonia was the cause of death of 60 per cent. of pigs dying during the test, and that pneumonia was responsible in most cases for non-approval as a result of too slow or too irregular growth-rates.

Summary

The effects of virus pneumonia of pigs (Betts, 1952) upon the growth-rates and efficiency of food utilisation of pigs were investigated in experiments under summer and winter conditions.

In each experiment, 16 eight-week-old pigs were paired off into two groups, each group being kept under identical conditions of housing, feeding and management. The control group was left to grow normally while pigs of the other group were each infected by the intratracheal inoculation of 10^1 infective doses of the M.R. strain of virus.

In the summer experiment the average growth-rate of the normal pigs from weaning to 200 lb. live weight was 1·29 lb. per day at a conversion rate of 3·89 lb. of food per 1 lb. live-weight gain, whereas the corresponding figures for the infected pigs were 1·11 lb. live-weight gain per day at a conversion rate of 4·25.

Under winter conditions the average growth-rate of the controls was 1·19 lb. per day and the conversion rate 3·85, while the pigs of the infected group grew at the average rate of 0·92 lb. per day at a conversion rate of 4·90 lb. of food per 1 lb. live-weight gain.

ANIMALS I HAVE MET

THE OSTRICH

BY

D. D. OGILVIE

Ostriches are well known to the general public (a) because they are said to have a peculiar habit of burying their heads in the sand when alarmed; (b) because their eating and drinking tastes have been widely publicised by the brewing industry, and (c) because their plumage forms a rather attractive decoration for the more opulent sort of ladies. Nevertheless, except in zoos where ostriches develop a nonchalant and somewhat haughty air, these birds are naturally somewhat shy and retiring and ask for nothing more than to be left alone in the wide open spaces where they congregate in droves and spend most of the time stalking gravely along to nowhere in particular.

I first became closely connected with the ostrich family when I was invited by Regent's Park Zoo to advise on anaesthetising a cassowary, which is a bird pretty much the same as an ostrich, only bigger, worse tempered, and, believe me, much more muscular. Regent's Park were very proud of their cassowary, which, on close inspection, seemed quite gigantic, and they told me with some pride that, if so minded, it could break down a teak door with a blow from its mighty foot. It was certainly quite a bird. How we anaesthetised it and the fun we had is another story but after we had done the job I had more than a healthy respect for its stamina and fighting spirit.

After that I was anxious to see and learn more of the ostrich family. I dipped into the literature. I took time off in countries where an ostrich on the skyline is nearly as common as a sparrow on the housetop in London. Once in Argentina with an exuberant Spanish gentleman I chased an ostrich over the pampas in a Jeep much to the bird's alarm and our own discomfort. Flat out he managed about 40 miles an hour, his legs going like pistons, head well back and chest out, a regular McDonald Bailey. Every now and then he "sold the dummy" by changing quickly from one foot to the other and moving smartly in a wide semi-circle. He left us battered and bruised when we could take no more and moved out of sight still going at a cracking pace and still, every now and then, weaving from side to side although we were several miles away.

I do not know anyone who, when sober, will swear that he has actually seen an ostrich bury its head in the sand. I have never witnessed the phenomenon myself, although I have made it my business to alarm lots of ostriches in sandy places which I am sure would have been quite suitable for the operation. The ostrich has a reputation for stupidity but I have a feeling he is not quite so stupid as all that. Certainly in my experience if he can run away he does. Maybe if he is really up against it he does plunge into the sand, beak and all, but I have never been able to move quickly enough to catch him bending.

Ostrich plumes mean happy thoughts. They conjure up memories of moth balls, well-upholstered maiden aunts, dames in pantomimes and, dare I whisper it, night clubs where they are often an essential prop. But their real boom days, at least for the moment, are over. In many countries growers have gone out of business. Most of those who remain are in South Africa and California where they spend the long hot days thinking out new ways of inducing the fashion industry to pronounce favourable judgment in their produce.

But it is inside the ostrich that real interest begins. This is certainly a wonderful creature. Omnivor is hardly a wide enough term to embrace all his eating habits. He literally fastens on to anything. So far as food is concerned he is guided by only one consideration: if it is not too large to swallow, eat it. And he usually does very well on nothing in particular. But sometimes even the ostrich is in trouble. If he has had too many bolts, nuts, nails and bits of glass he may show signs of indigestion, a pathetic sight, but provided he takes things easy for a bit he is usually soon his cheery self again, for by and large he has a robust constitution. Like man, however, when he really overdoes it, he may have to pay. It was indigestion, for example, that killed poor Hetty, the Belle Vue ostrich, in 1949, beloved by Mancunians and survivor of all the rigours of life in the North. Autopsy revealed that Hetty had swallowed—and, unhappily, failed to eliminate—a golf ball, a bullet, a glass stopper, the blade of a penknife, a tin-opener, a skewer, a spoon, six pennies, 16 halfpennies, and several pounds of a useful assortment of nails, screws and tacks. And recently at nearby Chester, Ossie, the two-and-a-half-year-old ostrich which is the pride of the local Zoological Gardens, was only just saved from a similar inglorious fate. Her illness was a mystery until it was noticed that the brass lock to her cage, measuring 3 inches by 2½ inches, was missing. The diagnosis was confirmed by a mine detector and a particularly natty piece of surgery got the lock back into its accustomed place much to the relief of everybody.

Strangest of all is the resistance of the ostrich to infection. Hobday recounts how in the early days of the caponising operation in South Africa, as many as 20 farmers used to insert their hands into the peritoneal cavity of each unfortunate demonstration bird in order to learn the technique. In over 2,000 such cases Hobday never knew sepsis to intervene.

Stupid bird then as he may be, the ostrich has certain natural advantages. Immune to the dangers of bacterial invasion, unmindful of the many hazards to life set up by the dietician, powerfully equipped to outrun most of his baffled pursuers, he will no doubt continue to exist and flourish long after many of his more intellectual contemporaries have passed from the scene.

For most of the experimental periods the affected pigs did not appear to be clinically ill, in spite of the depression of growth-potential by V.P.P.

Field observations suggested that the effects of the natural disease are frequently more severe than those indicated by these experiments.

The economic importance of the condition and its effects upon nutritional and similar studies are discussed.

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FARES FOR ANIMALS UNDER REVIEW

A full review of charges for animals accompanying railway passengers, and anomalies in present charges, is being made by the Railway Executive, states the Executive's Public Relations Officer. He added that there were certain legal aspects to be taken into consideration; and these might take a little time.

QUESTIONS AND ANSWERS

The submission of questions for inclusion in this column is welcomed; they can relate to any aspect of veterinary work, but must be of a general nature—questions cannot be considered in which information is sought regarding diagnosis or treatment of specific cases, nor for which solely a private reply is desired. For purposes of record, each question is numbered, and those submitting questions are required to furnish (not for publication) name and address.

Answers to readers' queries represent exclusively the personal opinions of the writers, and criticism of the replies will be appreciated.

All communications should be addressed to the Editor.

Hoof-paring in the Horse

Q. 432.—*Professor J. McCunn* (Vet. Rec. (1951). **63**. 680) *states, " By judicious manicuring a hoof may be trained to grow in almost any desired shape. . . . If you shorten the toe the heels will grow deep and the bars strong, the sole will rise and the contracted heels widen automatically." Please explain the mechanism of this action and how cutting the hoof affects the corium.*

A.—If a horse's hooves be neglected, or if it be turned out for a long period on soft ground, there is a great tendency for excessive growth at the toe. The hoof will grow in a curve forwards and upwards. Such a horse will walk like one affected with laminitis, *i.e.*, the action will be from heel to toe—almost a roll-over action. The respondent has specimens which illustrate this abnormal growth and one can see that the " grain " of the horn follows the general direction of the curved hoof. One example is shown in the four hooves of a pony. This pony, a great favourite, was provided for in its master's will. It was left a field in which it survived for a further 25 years without receiving any attention from the other disappointed heirs. Its hooves grew in the form of a half circle, simulating the shape of a cow's horns.

When the toes are overgrown it is obvious that an oblique stress is thrown upon the quarters and heels. The extra attrition wears the heels down at a more rapid rate than it does at the toe ; in consequence the toes grow uncontrolled. This alteration induces changes in position and function of the deeper parts including the os pedis and the corono-pedal joint. The posterior part of the os pedis tends to drop and the bone is no longer poised on its toe. Softer structures are affected also. The frog tends to get bigger and wider and the circulation within the hoof is impeded, especially the venous drainage. The sole tends to drop owing to the downward thrust of the os pedis. The impairment of venous drainage induces a state of passive congestion simulating that of a mild or recovering laminitis and the nutrition of the horn is affected adversely.

Remedial measures are directed towards (1) control of the effects of attrition ; (2) restoration of the position and action of the os pedis and corono-pedal joint ; (3) correction of the circulatory disturbance.

If the horn at the toe be removed so that the site is not in contact with the ground, then it follows that direct weight is borne by the quarters and heels and these parts are stimulated to better functional activity. Good functional activity enhances the circulatory mechanism and nutrition of the part. The horn grows strong and deep, with plenty of elasticity. The wings of the os pedis are raised and the corono-pedal joint is freed from restriction. The sole follows the os pedis and tends to resume its dome-like shape and the heels widen. The response to the cutting away of the horn at the toe, reducing its weight-bearing capacity and bringing the quarters and heels into increased activity, is to stimulate the horn-secreting tissues and promote restoration towards normal action and function of the corono-pedal joint and the disturbed circulation.

This expression of your respondent's thoughts on this matter may go some way to explain the phenomenon, but be that as it may, he can assure the enquirer that the procedure works in actual practice.

Itchiness and Alopecia in Bulls

Q. 433.—*Could you give me some information on the cause and treatment of the above? The condition usually starts with itchiness, resulting in dehairing of the patches where the animal is able to scratch or on grooming. The scrapings are negative. The hairless areas vary in size and are dry, mostly on the back or sides. The bulls are being fed on hay, roots—some fodder beet—grass and mineral licks. Water* ad lib.

A.—This condition in bulls during the winter obviously does give cause to considerable concern among veterinarians responsible for large studs of bulls which have to be maintained under show conditions throughout the year. The method of husbandry within the bull barn lends itself to a certain accumulation of dust and microparasites being deposited on the coat during feeding and littering, and this in itself must cause irritation. Regular and thorough grooming is one of the main preventatives of the broken skin, and to that end an endeavour is made to clip bulls around the neck and hindquarters to keep hair growth to a minimum and facilitate easy cleaning of the skin. This condition in housed animals as reported by the questioner, has given the respondent some considerable concern for some time. In his experience and observation considerable improvement followed an adjustment of management that he embarked upon during the late autumn. He has always believed that the stimulant of light has a beneficial effect on the cutaneous pores in any animal, and in order to provide this artificially he has, during the past winter, illuminated his bull barn every night until 10 p.m., with the result that the very short hours of daylight experienced during November, December and January are, in part, overcome.

The questioner also should bear in mind the important part played by vitamins in the ration of any bull, and should see that cod-liver oil is always incorporated in the ration during the winter months.

Contagious Canine Hepatitis

Q. 434.—*What are* (1) *the usual sources of infection, and* (2) *the methods by which infection is spread, in contagious canine hepatitis (" Rubarth's Disease ")?*

A.—1. *Usual Sources of Infection.*—There is strong evidence to suggest that carriers are largely responsible for the persistence of virus in infected kennels. (N. M. Larin. Canine hepatotropic virus in the natural host. Report to the International Conference on Virus Hepatitis in Leige, Belgium, 1952.)

2. *Methods by which Infection is Spread.*—American workers (G. C. Poppensiek & J. A. Baker (1951). *Proc. Soc. exp. Biol. N.Y.* **77**. 279) have recovered the virus from the urine 161 days after inoculation. Thus it appears that infected urine is important in the spread of the disease. Infection can be conveyed by the alimentary tract (S. F. J. Hodgman & N. M Larin, 1953, in press), although it is probable that lice may also play a part in transmitting the disease (H. B. Parry, N. M. Larin & H. Platt (1951). *J. Hyg. Camb.* **49**. 483).

Sows Savaging Litters

Q. 435.—*I sometimes meet cases of sows (often previously good mothers) savaging their litters. On two occasions lately I have met " epidemics " of savaging on farms ; in one case three sows in turn killed their piglets and became really vicious. Is there any possible nutritional, or even infective, cause for such occurrences?*

A.—The problem of sows savaging their young is complex and some believe the occurrence to result from a temporary

derangement of the sow's mind. Undoubtedly there are several causes.

As with cannibalism in chickens, some sows seem to be strongly attracted by the sight of blood and will quickly attack their young if any should be damaged in any way. This ferocious habit may be initiated by the sight and smell of the cleansings which are not always removed as they should be. It is also held that when sows (often previously good mothers) savage their litters, this is probably related to pain which may, however, be of intestinal rather than uterine origin. If for any reason such as lack of milk the youngsters are excessively eager and irritate or damage the teats with their sharp teeth, the sow's temper may be aroused and the habit may be started. Once it has developed there seems little chance of stopping it, except perhaps by introducing the piglets to the sows only at suckling time, keeping them under observation, and removing them to a safe creep until the next occasion. The habit might possibly be overcome by pursuing this system of frustration rigorously for the first four or five days, after which savaging is rare. By this time the piglets are better able to look after themselves and it is possible that their whiter colour at this stage as compared with the pinkish appearance associated with the first few days of life is a significant factor.

The inclination to savage can generally be anticipated by the intelligent pigman and precautions can be taken accordingly, *i.e.*, under the circumstances it is best to remove the piglets at birth and to keep them warm in a box over a hot-water bottle or in a creep, heated with infra-red, for the first 6 to 12 hours. By this time the sow's savagery may well have declined.

The view that a low protein diet encourages this habit is widely held, and there seems to be reasonable evidence to support this theory. Except in very exceptional circumstances where the sow is of a valuable blood line it is not desirable to keep a sow which has developed the habit of savaging her young.

REVIEW

[A Handbook to Poultry Practice. Keith Wilson. (1953). *Poultry World.* 10s. 6d.]

In this book the author sets out to supply concise information for students up to the level of the National Certificate in Poultry Practice, which is given following one year's course of instruction in poultry husbandry at county farm institutes. From this point of view the book fulfils its purpose in a most effective way. The information is given in a concise, legible and yet at the same time completely practical manner throughout.

This book should be of considerable value to veterinary students or to practitioners requiring some basic knowledge of poultry husbandry, but who do not wish to delve more deeply into the more specialised text-books dealing with separate aspects such as nutrition, incubation and rearing. Management of adult stock both for egg production and table production is discussed briefly and yet gives sufficient information for the needs of most except the specialist. There are some excellent illustrations, diagrams of housing methods, tables of nutritional formulae and a particularly interesting chapter on accounts and methods of recording.

To some extent this book resembles the " Aids to " series and can be strongly recommended to members of the veterinary profession desirous of increasing and bringing up to date their knowledge of this important branch of agriculture. It should be borne in mind, however, that the section dealing with disease and hygiene is designed primarily for the poultry student and is not intended to be a detailed description of either diseases or their control.

The book also contains a number of useful appendices. It is well produced and the printing and illustrations are of a high standard.

ABSTRACTS

Antibiotics : Synergism and Antagonism*

This is a brief review of some pharmacological aspects of antibiotics. The use of tubular blocking agents and the introduction of two slowly absorbed salts of penicillin benzethacil and l-ephenamine penicillin G, are mentioned as methods of maintaining the blood and tissue level of penicillin. It is noted that streptomycin and dihydrostreptomycin are effective against some gram-positive organisms, neomycin against gram-positive and gram-negative organisms, administered locally or orally. The fact that polymyxin B is active against *Pseudomonas aeruginosa* is mentioned.

Aureomycin, terramycin and chloramphenicol are active against gram-positive and gram-negative organisms, rickettsia, large viruses and some protozoa.

[The authors state that these antibiotics should not be given to adult ruminants as they may cause digestive disorders. However, horses, pigs and poultry are also dependent on the activity of the microbial population of the caecum and colon and might, therefore, suffer similar disturbances if given antibiotics which reach these parts of their digestive tracts.

It has been suggested that penicillin, streptomycin, bacitracin and neomycin are often synergistic with each other and never antagonistic. Combinations of penicillin with aureomycin, terramycin or chloramphenicol may be antagonistic.—*Abstractor.*] F. A.

* **Antibiotics : Synergism and Antagonism.** Scheidy, S. F., & Bunn, C. E. E. (1953). *Vet. Med.* **48**. 178.

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Synthesis of B-vitamins in the Cobalt-deficient Sheep, with Special Reference to B_{12}*

Three groups of three sheep were fed a cobalt low ration. Two groups received cobalt *per os* and the food intake of one of these groups was limited to equal the food eaten by the third group which received no additional cobalt. Assay of the blood for vitamin B_{12} showed that the animals receiving cobalt had 5 to 10 times the concentration of B_{12} in the jugular blood as the cobalt-deficient animals. On *post-mortem* examination the livers of the cobalt-adequate sheep contained 20 times as much B_{12} as those of the deficient sheep but less alkali stable B_{12}. The rumen contents of the cobalt-adequate sheep contained more than 10 times the concentration of B_{12} as those of the deficient sheep. No difference was detected in the concentrations of nicotinic acid or riboflavin between the rumen contents of the groups. A. T. P.

* **Synthesis of Certain B-vitamins in the Cobalt-deficient Sheep, with special reference to B_{12}.** Hoekstra, W. G., Pope, A. L., & Phillips, P. H. (1952). *J. Nutrit.* **48**. 421–430.

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Response of Cobalt-deficient Sheep to Vitamin B_{12}*

Three severely cobalt-deficient sheep were given 20 μg. B_{12} intravenously twice a day for 21 days. Their appetites, weights and the concentration of haemoglobin in the blood

* **Response of Cobalt-deficient Sheep to Intravenously Administered Vitamin B_{12}.** Hoekstra, W. G., Pope, A. L., & Phillips, P. H. (1952). *J. Nutrit.* **48**. 431–441.

Quarterly Meeting of Council, B.V.A.

SUMMARY OF PROCEEDINGS

On the Friday approaching the August Bank Holiday week-end much important business was adequately and expeditiously considered at the Council meeting held at the Connaught Rooms, W.C.2, with the President, Mr. A. M. Graham, M.R.C.V.S., in the chair.

As the prelude to committee business came the pleasing intimations that Professor Wooldridge, though kept away by the weather, was sufficiently recovered from his serious illness to have contemplated attending the meeting; also that the membership of the Association, at 3,904, was 28 up on the highest figure for 1952. Unfortunately the presentation of membership figures involves losses by death as well as accessions, and this occasion called for the payment of heartfelt tribute to Mr. John Holroyd, of Blackburn, who, as the President reminded Council, despite a busy life in his extensive practice, found a great deal of time to engage in activities for the Royal College, of which he was President from 1940 to 1942, the Lancashire Division of the Association and the National Veterinary Benevolent and Mutual Defence Society. Mr. A. J. Wright, immediate Past President of the Association, spoke of Mr. Holroyd as one who really lived for his profession, while it was due to his efforts that success attended the reorganisation of the Defence Society. Mr. E. R. Callender recalled that Mr. Holroyd, despite the cruel affliction of rheumatoid arthritis which beset him in later life, had played a prominent part in the affairs of the "Lancashire" for 40 years. The amount of work he managed to get through, despite his physical handicap, was astounding.

Officers of the Association

Outstanding among the many significant happenings foreshadowed—principally in the report of the General Purposes and Finance Committee—was the forthcoming selection to be made at the annual general meeting at Aberdeen next month, of those who will guide the destinies of the Association during the year 1953-54. The recommendations of the committee, for approval by Council—which was intimated with acclamation in each case—were commended to the meeting by the President, who is in no sense "out-going" pending his election as "Senior Vice-President" for the reason that his period in office reaches its climax at Congress.

Mr. Graham spoke of Mr. Alex. Thomson, of Glasgow, now groomed for the presidency by a year of office as "Junior Vice," as one who stood very high in the esteem of the Association, and one who, he was sure they would all agree, would make a most excellent President. For the very important office of Junior Vice-President, the committee confidently put forward the name of Professor Alexander Robertson, who had many outstanding achievements to his name, and who was an eminent teacher at a centre of learning—the Royal (Dick) School of Veterinary Studies—which had provided the Association with some excellent officers: he was sure Professor Robertson would maintain that high tradition. All would be glad to learn that Mr. H. E. Bywater had consented to be nominated for another year as guardian of the Association's finances; Mr. Bywater, indeed, apart from his excellence as a treasurer, was a most knowledgeable and valuable member of the team of officers, and one, moreover, resident in London. They were more than sorry, under the rules of the B.V.A., to lose their Hon. Secretary, Mr. Hebeler, after three years of hard and most conscientious work. To replace him the choice had fallen upon Mr. McConnachie Ingram, of Oxted, and a very good choice it was. Mr. Ingram, who had a very large practice, was President of the South-Eastern Division and a most helpful member of the Technical Development Committee. "We are extremely lucky to get such a busy man to take on a job like this," added the President, amid applause, which was renewed when he proceeded to commend to Council the name of the General Secretary. Everybody who had been through the chair knew the value of Mr. Knight, and he could only endorse, with emphasis, all the high praise of previous presidents.

The New Premises

From the same report Council learned with satisfaction that the purchase of the lease of No. 7, Mansfield Street, W.1, the impressive premises recently acquired as Headquarters of the Association, had been completed and that a building licence to carry out the requisite repairs and alterations had been obtained: the work had been put in hand.

A further pleasing feature was the intimation that the sum received by the Steele-Bodger Memorial Fund, to July 30th, was £3,467 11s. 10d.; expenses were under £100 and the Appeal Committee—and the Association—were deeply indebted to those who were doing so much to make the fund a successful one.

Call-up of New Graduates

The special sub-committee appointed by the Council to review the manpower position is to be asked to take into consideration the recent decision, announced by the Ministry of Labour and National Service, that veterinary students completing their course in 1953 will be available for call-up immediately on qualifying. In amplification, the President said that the Royal College had written to the Ministry of Agriculture suggesting that a liaison committee should be set up on similar lines to the committees operating for the medical and dental professions, to consider cases of genuine hardship; it was also suggested that the age of deferment (at present 26) be extended to 30, so that young men who had some particular job on hand could complete it before doing their national service. The President stressed the point that, in the event of such a liaison committee being formed, all possible information relating to cases of hardship should be sent in to Gordon Square, for presentation to that committee.

The Technical Development Committee, also, is seeking the co-operation of members in the provision of information: in this instance, that likely to be of service to the Ministry of Agriculture Working Party on precautionary measures against toxic chemicals used in agriculture. This committee obtained approval for a recommendation to be submitted to the next meeting of Council that the by-laws be amended to enable it to increase its membership by six, to form the nucleus of a small-animal sub-committee. In addition to a number of interesting progress reports on the preparation of handbooks, this committee presented the outcome of its deliberations on the evidence presented to it on the use of the rubber ring ligature in the castration of calves and lambs and in the docking of lambs. This report was approved and will be published shortly in *The Veterinary Record*. Suffice it to say, at the moment, that the application of the rubber ring ligature was accepted as the least objectionable of the methods at present employed by farmers to-day in the castration of older lambs and the docking of lambs, but that in the castration of calves up to three months of age, or of lambs up to seven days old, the process is not accompanied with manifestations of discomfort or pain.

Veterinary State Medicine

The committee concerned with these matters reported that the draft Swine Fever—Registered Vaccinated Herd Scheme, as revised by the Ministry in the light of a tripartite meeting (B.V.A., Animal Health Division of the Ministry and the N.F.U.) held on June 17th, had been submitted to a special meeting of Council held on July 9th, and accepted in principle. A few suggestions for making it more workable had, however, been referred to the officers to discuss with the other bodies concerned.

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increased immediately treatment started and the response continued for 100 days. After this further signs of deficiency were noticed and treatment was again started; appetite and bodyweight increased but haemoglobin concentration was erratic. The authors consider B_{12} is the most important, and probably the only limiting factor in the cobalt-deficient sheep.

A. T. P.

The B.V.A. memorandum on meat inspection and control has been revised and brought up to date. Members will be able to study the final draft shortly. Some members are to study processes of meat inspection in operation abroad, to lend weight to the presentation of the Association's incontrovertible case for the vesting of control with the veterinary profession.

The Overseas, Home Appointments and Organising Committees had admirable reports to give of energetic work in their respective spheres, and the Editorial Committee put forward a promising programme for the provision of material, with special reference to the need for increasing the interest and topicality of the Notes and News section.

Anaesthesia: "A Landmark"

The remaining committees all reported busy sessions during the past quarter. "A landmark in the history of the Association" was the description applied in Council to the presentation in the House of Lords of the first Bill to be drafted by the B.V.A., the purpose of which is to amend the Animals (Anaesthetic) Act of 1919. One of the chief provisions of this Protection of Animals (Amendment) Bill enables the veterinary surgeon to exercise his discretion in selecting the agent (general or local) he desires to use in the induction of anaesthesia.

The "Dalrymple-Champneys" Prize

The decision of the "Dalrymple-Champneys" Prize Selection Committee to make Mr. George N. Gould, J.P., M.R.C.V.S., of Southampton, the recipient of this year's award was acclaimed. Doubtless the President, when presenting the cup and medal to Mr. Gould at Aberdeen, will amplify the committee's reference to "his outstanding contribution to veterinary practice and the application of modern methods to the changing conditions of animal husbandry." The generous action of the donor in making provision for the award in perpetuity was gratefully acknowledged.

Finally, Mr. P. Hastie summarised his admirable report—to be published in full in due course—of the proceedings at this year's Veterinary Hygiene Section of the Congress held by the Royal Sanitary Institute. He and others took the opportunity to enter a plea for greater support for and participation by members of the profession in this important annual event and opportunity to promote the interests of veterinary public health. It was left to the General Purposes and Finance Committee to consider the suggestion that the Association's representation at this Congress be increased.

IN PARLIAMENT

Commons Adjournment Debate on Swine Fever

As was intimated in our issue of last week, prior to the rising of the House for the Summer Recess on Friday, July 31st, Sir Leslie Plummer initiated a debate on the subject of swine fever. In the course of his speech Sir Leslie said that he had a very sad personal interest in the matter, as he was a breeder of pedigree pigs and his herd had suffered grievously. The general position was very grave. In the 10 years since 1943 the number of outbreaks had gone up from over 500 to over 1,900 to July only of this year. The disease disappeared almost to vanishing point in 1947, 1948 and 1949, when the figures were 37, 27 and 5 respectively, but now there were 1,913 outbreaks of swine fever this year up to the 27th of the month. The trend was upward, and the effects on breeding were so considerable that it was right and proper that before they went away for the Summer Recess they should remind the Ministry of Agriculture of these facts and ask some pertinent questions.

One of the difficulties of overcoming this disease, which was invariably fatal, was that it was extremely infectious. Efforts to overcome it were not made easier by the fact that farmers in some places were showing a superstitious attitude to it. He knew that some farmers took the view that it was no good using the invaluable crystal violet vaccine which was supplied by the Ministry of Agriculture for vaccination purposes because they said that if a sow which was in pig was vaccinated it would slip its pigs, and that if a boar was injected it would become sterile.

He did not doubt that on animals in an advanced state of pregnancy vaccination would have a deleterious effect. Pigs were as temperamental almost as humans and they must not be upset in the last stages of their pregnancy. The fact that in the past some farmers had suffered the loss of their animals or the loss of litters or had had boars become sterile was not a cogent argument against the use of the crystal vaccine.

There was a growing feeling—and he would like the Parliamentary Secretary to say whether it was true or not—that swine fever had been spread in this country through the American airfield stations and the swill obtained from those stations. This belief was based on the knowledge that there was a swine fever outbreak in the United States which had reached catastrophic proportions. It was believed by some that the food being brought into this country to feed the American airmen was in some way or another carrying the infection. If that were true he asked the Parliamentary Secretary to see that the collection of swill from the airfields was stopped.

Another barrier was the lack of enterprise and drive on the part of the Ministry. It was astonishing that an infectious disease of this kind was treated so light-heartedly by the Ministry in the direction of advising farmers when outbreaks were taking place. Unless a farmer had a private information service he could not know that an outbreak had occurred for, unlike the situation that existed with foot-and-mouth disease, no one came round to tell him that there was an outbreak in the district. It was true that the area could be closed and that it might be impossible for a farmer to shift his animals to market or to sell any of his pigs off the farm, but he was not advised officially either that an outbreak had taken place or that an outbreak of the disease was suspected on the farm. The trouble with swine fever was that it could be taken unwittingly on to a healthy farm when it was in its early stage elsewhere. Yet the Ministry knew who the pig producers were in an area which was infected or in danger of infection, because it had in its statistics the records of the pig producers. Above all, the police knew because it was their job to go round the pig farms every so often to check the animal movements book. He suggested some co-operation should take place between the Ministry and the police to see that, when an outbreak was suspected, the police warned farmers in the district of the dangers to their herds and urged them to take immediate and effective action against the infection. When a farmer got a suspected case of swine fever on his farm, it was essential that he should get confirmation or denial of the existence of the disease in his animals as quickly as possible. . . .

He was sure that the Ministry could do little until they found out the exact period of immunity given by crystal violet vaccine. The attack that he had suffered had cost him more than 100 pigs but most of them were young pigs up to about three months of age. All the adult pigs that he had had vaccinated had survived the attack. It was therefore important that farmers should know—at any rate, in his case, where vaccination took place at the right time—that vaccinated pigs in an infected farm were almost wholly immune from attack. Considerable additional research was necessary to investigate the duration of the immunity and the extent to which the disease was passed on.

"Those experiments," the hon. Gentleman continued, "are bound to be complicated and to require a great deal of planning and organisation, but because it is a notifiable disease under the Diseases of Animals Act industrial firms and other normal research agencies are inhibited from carrying on the work that they should be doing in finding out the period of immunity; and an enormous amount of work is thus loaded on to Weybridge.

"Is Weybridge properly equipped, both with laboratory equipment and with staff, to meet the situation, or is it, too, suffering from the economy drive? Weybridge must have the facilities, both with laboratory equipment and with manpower. I presume that at some time or other the Ministry, either by statutory order or administratively, will have to take such action as will give power to the other research organisations to proceed with finding the answer. Any scheme for the provision of a cheaper form of swine fever vaccine, while it is desirable, will not really solve the problem until we discover how the disease is caused and the period of immunity afforded by the vaccine.

"What is happening to the projected scheme for setting up the special panel of vaccinated animals and by which farmers are to be provided, through their 'vets.' or directly, with the vaccine at a reduced rate, and which seeks the co-operation of auctioneers in ensuring that they have special pens and give special publicity to the fact that vaccinated animals are for sale? Why does it take such a long time to get a scheme of this kind established?"

On the question of compensation, he could not see why, if a farmer who suffered foot-and-mouth disease in his pigs was compensated, a farmer whose pigs had swine fever received no compensation whatever. He was wrong, perhaps, in saying, "no

compensation whatever," for every time the Ministry "vet." called to see him and ordered the destruction of pigs, he gave him 7s. 6d. towards the cost of digging the hole for burying, which was scarcely adequate compensation for the losses they were suffering. If the pig farmer was a bacon producer, if he suspected that there was swine fever on the farm, he could send his healthy animals into the bacon factories and, by and large, he was not a heavy loser; but when a pig breeder who tried to improve the strain of the country's pigs lost his young suckling stock, two, three or four weeks old, it was no use whatever sending that young stock to anybody. It was slaughtered and buried, and the man was a complete loser. Although destruction was in the national interest in checking the disease, he submitted that those animals should be slaughtered under exactly the same conditions as applied to animals that were slaughtered because of foot-and-mouth disease.

Sir Leslie Plummer continued. "May I make it quite clear that in all I have said I have no criticism of any kind to offer of the Ministry's staff in the area in which I live? On the contrary, the staff of the Ministry and that of the National Agricultural Advisory Service are, in my experience, always ready and eager to help the farmer. I want to pay public testimony to the spirit of co-operation and understanding that the Ministry officials show.

"The trouble is that there are not enough of them. I will give an example In the middle of this outbreak I wanted to talk to the chief animal health officer of the Ministry at Chelmsford, but I was told I could not do so because he had gone to Scotland. I asked why and the reply was, 'Because there is swine fever in Scotland.' I pointed out that there was swine fever in Essex. It is quite clear that there is a shortage of staff and he was not breaking any orders in going to Scotland. But it really is not good enough, when there are serious outbreaks of a kind like this, to find that a man whose advice is sought so eagerly is not available because there are not enough officials in another area.

"If the Ministry are to tackle the problem and have a drive to eradicate swine fever, they will have to go to the Treasury to get the staff and money to supply the apparatus which is necessary. Above all, they will have to reorganise their own department to see that the drive is made in the interests of farmers and of food production in Great Britain."

Mr. R. T. Paget: Swine fever was a subject which had been treated with far too great complacency. For a long time foot-and-mouth disease was treated with the same sort of complacency as swine fever was treated now. That disease took a tremendous toll of the country's agricultural wealth and was then treated with energy and the situation was got in hand. Our losses in foot-and-mouth disease, even in the bad years, when a lot of slaughter was necessary, were trifling compared with those on the Continent and in America. That was because the disease was now treated with energy. Fowl pest was also more or less neglected until it became serious, and it was now getting in hand, but swine fever was now getting out of hand. It had increased alarmingly and nothing had been done about it.

Would the Ministry really take this matter in hand? Pig meat was the one easily expendable source of meat. Would the Ministry see that treatment of this disease was dealt with with the same energy and upon the same basis as foot-and-mouth disease and fowl pest?

Government Reply

The Joint Parliamentary Secretary to the Ministry of Agriculture (Mr. G. R. H. Nugent) began by expressing sympathy with the hon. Member for Deptford (Sir L. Plummer) in his misfortune in having an outbreak of swine fever on his farm. All who had anything to do with the farming world knew of the distress which was caused, apart from the cost, by having an outbreak of foot-and-mouth disease, swine fever, or fowl pest.

The hon. Member did not give an entirely fair picture of the general incidence of swine fever over the last 15 or 20 years. The fact was that in pre-war days the incidence was high. It was comparable to and sometimes even higher than what it was this year. That was not a matter of satisfaction but just a fact. Swine fever had been with us for many years, imported as well as germinated here, and except during the war years, when for a variety of reasons it was easier to get control, we had had a fairly high incidence. Certainly the incidence this year had been exceptionally high and it might well finish as high as in 1939 with 3,200 outbreaks. He hoped it would not get so high as it was in 1940 with more than 5,000 outbreaks, but it certainly was high and a matter of deep concern to the Government. As he hoped he should convince the House, they were taking active measures to deal with it and he hoped they would be progressively more effective.

"On the matter of general policy, the main plank is the crystal violet vaccination to which the hon. Member referred. We do use movement control and that is a very great help in dealing with an incidence of the kind we have had this year, but crystal violet vaccine is the long suit for getting control and eventually I hope for suppressing the disease. The hon. Member asked if we thought that the very high incidence this year was due to swill from U.S.A. camps. The answer is, almost certainly not. The swill from those camps is now all sent to central processing plants where we can be quite sure it will be safely sterilised on premises where no livestock are kept. In the few camps where that cannot be done, they have agreed to burn it there and then on the camp, so we hope that not only this disease but fowl pest and all veterinary diseases from that particular source may be kept under control.

"This vaccine became available in 1947 and its use has grown a little since then, though nothing like so much as I should like. Its use corresponds to a large extent with the incidence of the disease. When farmers hear that there is an outbreak in their neighbourhood they start to vaccinate, often of course too late. What we want them to do is to follow the practice of the hon. Member and vaccinate regularly every year in order to immunise their pigs. We do recognise the necessity at the Ministry to promote a drive to get this over to the farming community.

"The hon. Member asked what had happened to the scheme which would make vaccination easier and more regular for farmers. Discussions with the British Veterinary Association and the National Farmers' Unions have been rather lengthy, but I am glad to say they have been practically concluded and, broadly speaking, agreement has been reached. I hope that in the course of the next couple of months an announcement can be made giving all details of the scheme. I believe that will offer to farmers generally the kind of vaccination service that they really could and should take up and use generally. When we are in a position to put that out we shall, I can assure the House, do everything we can to put it over and to keep on putting it over to the farmers throughout the country.

"On the question of research, swine fever is, as the hon. Member observed, a notifiable disease, and following our general practice, therefore—there are exceptions—research work is done in our own laboratories. The research work is accordingly being carried on at Weybridge by our own people, and not, in this instance, by the A.R.C. Some valuable work is now going on there on three lines. The first of these is on the improved application of the crystal violet vaccine, with the ultimate intention of being able to reduce the dosage in order to cheapen it. The second line of research work is on new and different methods of producing the vaccine; it is now expensive in production, as it has to be produced from a healthy pig. The third line of work is on a new method of diagnosis. Diagnosis is a difficult and lengthy process.

"I have taken note of the hon. Member's observations about the need for research into the decreasing immunity conferred by vaccination, and I will consult the experts to get their view as to whether we could profitably engage on such a piece of research work. There are difficulties, however. To deal specifically with one or two points which the hon. Member raised on this matter, I would say that the best view is that vaccination is normally effective for complete immunity for 12 months. When I say 'normally' it must be realised that, as with any other vaccination, whether for human beings or animals, there are bound to be exceptions where the physiology of a particular creature is different from that of others, and the immunity is therefore not so strong. Then there is the other variant, of the creature concerned, whether it be a pig or any other animal, meeting some particularly strong infection; so that there is the combination of a lower immunity due to less effective vaccination meeting an exceptionally strong infection. Then the immunity may break down. I can say that our view is that crystal violet vaccination to-day is normally effective for a full 12 months. I can certainly confirm, and gladly do so, that the suspicion in the minds of some farmers that the vaccination in any way interferes with effective breeding capacity of either boars or sows is completely unfounded. . . .

"We are proceeding with research work on diagnosis to see if we can find some more certain method which will enable us to speed up the process. If we are able to do so we shall certainly put it into practice as soon as we can. As for the absence of the divisional veterinary officer to which the hon. Member referred, that officer was absent in Scotland on leave. He was not, in fact, engaged on veterinary work there; he was taking part of his annual leave. During his absence the senior veterinary officer was deputising for him. It is fair to recall, in order to show that the veterinary staff of the county were really covering the situation, that although the senior veterinary officer was not present at the telephone when the hon. Member rang—he was out visiting

a farm at the time—that information was passed to the hon. Member and he was given a number where he could ring up the officer if he wished to do so. That was not done, but on the return of the veterinary officer to the office he was given a report and proceeded that afternoon to the farm. It shows that not only the veterinary officer concerned but the general capacity of the staff who cover the county was more than adequate that afternoon and evening. I should have thought that that was reasonably good service. I should also have thought that it shows that these men, while they are at times extremely hard worked, are sufficient in number for the many tasks with which they have to deal.

"The hon. Member asked me an important question as to why we do not have notifications of swine fever in the same way as for foot-and-mouth disease. Foot-and-mouth disease is a very highly infectious disease which is carried in a great variety of ways—by human beings and possibly by birds and other animals. Therefore, in the case of a foot-and-mouth outbreak, it is necessary, as soon as it is confirmed, to establish an 'infected area' of so many miles round the farm in order to limit the spread of infection. Therefore, arising from that physical fact notification must be made to all the farms in that area immediately, because they are all part of the infected area. With swine fever we have a different picture. Fortunately, it is nothing like so infectious. To all intents and purposes, the infected area is the farm where the outbreak occurs, and it is normally possible to keep the infection within the boundaries of the farm. No infected area is therefore necessary, and isolation with all its consequent expense and the dislocation that follows is unnecessary. It is not a case of comparing like with like.

"The hon. Gentleman asked why we should not have the same slaughter and compensation policy for swine fever as for foot-and-mouth disease. The answer is that this policy was followed until about 40 years ago. It was dropped in 1916 because the Government of the day, I understand, were of the opinion that the policy simply was not succeeding and the cost was very great."

Sir L. Plummer: "May I make the point that crystal violet vaccine was not then known?"

Mr. Nugent: "At the same time vaccination was beginning to come in. The combination of those features brought the Government of the day to the decision that it would be better to drop the slaughter policy. The same considerations still apply, and there is a further one which is intrinsic. That is the veterinary objection of the long incubation period of anything up to 28 days during which time infection may be spreading and the outbreak cannot be confirmed. That makes it difficult to apply a slaughter and compensation policy.

"There is also the important point of general policy. Foot-and-mouth disease is highly infectious. It is impossible to contain the infection within the area of a farm, and it may spread all over the country. With swine fever the infectability is by no means so great. It is possible to contain the infection and a large number of animals will recover. Mortality is not always 100 per cent. The policy of vaccination with a really effective vaccine is obviously the right policy to follow and our concern is to see that this is put into practice universally, or at any rate by all pig breeders throughout the country.

"I can assure the House and particularly the hon. Member that we firmly intend to prosecute that policy to the utmost. Calling attention to it to-day will prove of considerable help in giving information and publicity to a subject which is of great importance to the livestock of this country."

"110 DOGS KEPT IN RENTED HOUSE"

The President of the Dublin High Court gave judgment for £550 and costs in the action in which Mr. Sydney A. Grayson, a company director, of the Old Manor House, Seisdon, Staffordshire, claimed damages from Dr. William Baker McCrea, formerly of Fitzwillian Square, Dublin, and now living in South Africa, for damage done to a house and furniture by dogs.

Mr. W. O'B. Fitzgerald, for Mr. Grayson, said that his client had let furnished Lough Bray House, Glencree, Co. Wicklow, in August, 1950, to Dr. McCrea for one year at a rent of £30 a month. In breach of the agreement, Dr. McCrea had kept dogs in the house—as many as 110 at one stage. All the paintwork was destroyed so far as it was within reach of the dogs, wallpaper was torn off the walls, and the woodwork was scratched and eaten. Window-sills were also eaten and expensive carpets, linoleum and other furniture were seriously damaged.

THE XVTH INTERNATIONAL VETERINARY CONGRESS

[From Our Own Correspondent]

Stockholm, August 9th.

Stockholm, the beautiful capital city of Sweden, is this year celebrating its 700th anniversary and assumes the rôle of host at a festival to which she welcomes the whole world. This wonderful city of islands, bedecked with flags as it is and blessed at the moment with the loveliest of sunshine, smiles her welcome on the thousand or so delegates who have come here from all over the world to attend the 15th International Veterinary Congress. There must surely be very few countries who are not represented at this important gathering. Sweden, naturally, provides the largest contingent but there are well over 100 veterinarians from the United Kingdom, 70 or so from the United States and large numbers from France, Denmark, the Netherlands, Switzerland, Italy, Finland, Austria, the Argentine and Norway. A striking feature is the presence of a very large delegation from the Federal Republic of Germany whose veterinary delegates number over 80. The U.S.S.R. is represented at the Congress by four members. Let us hope that when the Congress meets again in a few years' time, world conditions will be such that this country will send a much larger delegation. She must surely have much to contribute.

The Royal College of Veterinary Surgeons was represented by the President, Professor R. E. Glover, and the British Veterinary Association by Mr. A. M. Graham (President) and Mr. A. J. Wright (Senior Vice-President).

The writer left London by air and the passengers' lounge at London Airport might have been a conference room at Weybridge! The Ministry were undoubtedly strongly represented in these passenger lists and passing through Immigration in the wake of the Ministry "shield" the writer was asked by the official what would happen now if there was an outbreak of foot-and-mouth disease! Despite a late start due to "technical difficulties" the air journey was pleasant enough and we flew in glorious weather arriving in Stockholm just as the evening glow was fading from the sky.

Visiting the Congress Bureau on Sunday morning we were loaded up with the Congress papers. I say "loaded up" advisedly and I feel sure we shall all have to pay excess baggage charges to cover the weight of the Congress proceedings. I wonder, shall we ever have the Congress papers delivered to us in reasonable time before the Congress so that we can study those in which we are interested? This, of course, is an old complaint and there must be great difficulties in getting the Congress literature out in time, but 1,200 pages of technical communications is a formidable weight to read—or even to carry! On the one hand lies Stockholm—open, beautiful, sunny and inviting—on the other the massive tomes which will help us to steer our way through this great Congress. I wonder which will win on this brilliant Sunday afternoon?

The Congress opens to-morrow (Monday 10th) with a plenary session in the Concert Hall. Most of the meetings are to be held in this fine stately building in the market place in the centre of Stockholm. It is, we are told, the meeting place for many congresses.

The opening session, commencing with the Swedish Festival Overture, played by an orchestra from the Swedish Broadcasting Corporation, will include addresses of welcome by Mr. Axel Alegren, President of the Organising Committee, and by the Swedish Minister of Agriculture, Mr. Sam. Norup. Next will come the election of officers

to the Congress, the following being the proposals of the Organising Committee:—

President.—Mr. Karl Eriksson, Sweden.

Vice-Presidents.—Messrs. C. Bressou (France), W. A. Hogan (U.S.A.) and A. Hjärre (Sweden).

Secretary General.—Mr. A. Isaksson (Sweden).

Treasurer.—Mr. G. T. Krantz (Sweden).

The President's address will follow, this being succeeded by addresses by representatives of International Organisations.

The plenary lecture for this opening session is to be given by Sir Thomas Dalling as "The Veterinary Profession—Past, Present and Future."

Each morning throughout the Congress there will be a plenary session consisting of lectures on subjects of general importance delivered by world authorities. The sectional meetings will be held in the afternoons and there is a very full programme of papers by contributors from all parts of the world. In addition, a comprehensive programme of visits to places of veterinary interest both in and out of Stockholm and a very full programme of tours has been arranged.

THE ORGANISING COMMITTEE

Following are the members of the Organising Committee of the Congress:—

Mr. Axel Alegren, Veterinary Councillor, Royal Veterinary Board, *Chairman of the Committee*, Stockholm.

Mrs. Frida Alegren, Stockholm.

Mr. Gösta Björkman, District Veterinarian, Chairman of the Swedish Veterinary Medical Association, Vagnhärad.

Dr Sven Dyrendahl, Associate Professor, Department of Animal Husbandry, Royal Veterinary College of Sweden, Stockholm.

Dr. Karl Eriksson, Professor, Dean of Royal Veterinary College of Sweden, Chief of Department of Animal Husbandry, *President of the Congress*, Stockholm.

Dr. Albert Hjärre, Professor, Director of State Veterinary Medical Institute, *Vice-Chairman of the Committee*, Stockholm.

Mr. Axel Isaksson, Chief of Department of Pathology, State Veterinary Medical Institute, *Secretary of the Committee*, Stockholm.

Captain Gunnar Krantz, Army Veterinary Surgeon, Swedish Army Command, Secretary and Treasurer of the Swedish Veterinary Medical Association, Stockholm.

Dr. Nils Lagerlöf, Professor, Chief of Department of Obstetrics and Gynaecology, Royal Veterinary College of Sweden, Stockholm.

Mr. Olof Swahn, Chief of Advisory Department, State Veterinary Medical Institute, Stockholm.

The Organising Committee are to be congratulated on the vast amount of work they must have put in to the preparation of this Congress and everything seems set fair for a most interesting and enjoyable week.

(To be continued)

NOTES AND NEWS

Diary of Events

Aug. 18th.—Eastern Counties Veterinary Society: Shipley Bowls Tournament in aid of the V.V.B.F., at the "Two Bears Hotel," Great Yarmouth, 6.30 p.m.

Aug. 19th.—Meeting of the Editorial Executive Sub-committee at 36, Gordon Square, W.C.1, 2.30 p.m.

Sept. 6th—12th.—Seventy-first Annual General Meeting and Congress of the British Veterinary Association, at Aberdeen.

Sept. 10th.—Annual General Meeting and Dinner of the Royal Dick Alumnus Association at Aberdeen (The Northern Hotel), 6.30 for 7 p.m.

Aberdeen Congress Tickets

Those members intending to be present at the B.V.A. Congress in Aberdeen but who have not yet returned the form of application for tickets for the various functions, excursions, etc., circulated with our issue of August 1st, are requested to complete and forward it *as a matter of urgency*, to the General Secretary at 36, Gordon Square, London, W.C.1.

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R.C.V.S. Annual Fees

It is now not generally appreciated that from its foundation in 1844 until 1920, the College's only sources of income were the voluntary contributions of members and any access of income from examination fees over expenditure in the Diploma examinations. In 1920 Parliament allowed the College to charge an annual fee of one guinea to each of its members within the United Kingdom, which fee, despite the great depreciation in the value of money, has remained unchanged until the present time.

By the Veterinary Surgeons Act of 1948 Parliament empowered the Council to raise the annual fee to a sum not exceeding five guineas in the case of the Register of Veterinary Surgeons, and not exceeding one guinea in the case of the Supplementary Veterinary Register. The Council was also empowered to prescribe a different fee for different classes of cases in these categories, and for members practising outside the United Kingdom and the Republic of Ireland.

Because of the careful husbanding of its resources, the Council has been able to postpone the inevitable raising of the annual fee until this present year, although it will be remembered that in the Annual Report for 1951 the profession was warned of the impending change. The outline of the proposed change was set out in the Annual Report this year, and has now been given effect to by Parliament after confirmation by the Privy Council.

The annual fee for this year now becomes payable. Next year and in each succeeding year it will be payable on or before April 1st.

It is understood that a letter will shortly be issued by the Royal College to all persons whose names appear on the Statutory Registers containing instructions regarding the special procedure to be adopted in respect of this transitional year.

Different classes of persons are now affected, and, for the first time, members practising overseas become liable to assist the College from which they derive their professional qualification.

They will, however, receive after payment in each year the Annual Report and a copy of the Register, together with any other publications of the College for members generally. The new fees are as follows:—

REGISTER OF VETERINARY SURGEONS

(*a*) All members practising in Great Britain and Northern Ireland, the Channel Islands and the Isle of Man ..... Four guineas

(*b*) All members practising anywhere else in the world, except within the Republic of Ireland. One guinea

(*c*) Any member who is retired and not in practice and who makes a declaration to this effect on a special form ..... One guinea

(*d*) All members practising within the Republic of Ireland will continue to pay their annual fee to the Veterinary Council of Ireland. This matter is provided for by Treaty between the Governments of the United Kingdom and the Republic but a new Treaty is now under consideration.

Supplementary Veterinary Register

All persons registered in the Supplementary Veterinary Register ..... One guinea

It is requested that no remittances be forwarded to the Royal College of Veterinary Surgeons until the above-mentioned letter is received.

The Orders in Council dated July 27th (S.I., 1953 Nos. 1149 and 1150) not only contain the above provisions, but also lay down that a university graduate on the Register of Veterinary Surgeons shall pay a registration fee of six guineas in the same manner as a holder of the M.R.C.V.S. diploma. The fee for restoration to the register on failure to pay the annual fee is one guinea.

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Penicillin and Aureomycin Feed Supplements for Pigs and Poultry

Therapeutic Substances (Supply of Antibiotics for General Purposes) Regulations, 1953

The above regulations, made under section 2 of the Therapeutic Substances (Prevention of Misuse) Act, 1953, were issued on Thursday of last week. Coming into operation on September 1st, they enable penicillin and aureomycin (the latter in a restricted form) to be used in the food of pigs and poultry, subject to certain safeguards. Both these preparations are controlled under the Penicillin Act, 1947, which means that their retail distribution is otherwise limited to supplies given by, or under the direction of, doctors, dentists and veterinary surgeons, or dispensed on their authority by pharmacists.

The regulations provide for these antibiotics to be incorporated in pig and poultry food, either in the form of a supplement to be added to existing food or ready mixed with the food by the pig and poultry food manufacturers. The Regulations have been made after consultation with the Medical Research Council and Agricultural Research Council.

Safeguards

Safeguards from a health point of view are:—

(a) Only minute quantities are required for this purpose and a maximum concentration is specified both for the supplement and the feeding-stuffs.

(b) The appropriate Health Minister must approve the composition of the "diluent" of the supplement. It will not be practicable to extract the antibiotic for use as medicine.

These arrangements will not affect medical supplies. Penicillin is in ample supply. Aureomycin will be used in the form of the "residue from the process of extraction" or in any other approved dilute preparation. The supply of medicinal aureomycin will not be affected.

In the case of supplements the Regulations require certain information relating to the supplement and the antibiotic included to be given on the labels of the containers in such manner as the appropriate Agriculture Minister may require; they also empower him to require additional information to be given about the storage and use of supplement. The labels of feeding-stuffs containing antibiotics must contain such information as that Minister requires about the antibiotic added and the storage and use of the feeding-stuff. The regulations apply to England, Wales, Scotland and Northern Ireland.

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Personal

Births.—Carr.—On July 23rd, 1953, at Exeter, to Iris and Robert Carr, M.R.C.V.S., a son, Christopher—brother for Angela, Ian and Sandra.

Dundas-Taylor.—On July 30th, 1953, at Bonnyrig, to Von (*née* Henry) and Buchan Dundas-Taylor, M.R.C.V.S., a son.

Tarry.—On August 1st, 1953, at Croom, Eire, to Mary (*née* Paterson), wife of A. R. Tarry, M.R.C.V.S., a son—Charles Anthony.

Ministry's Veterinary Field Staff Appointments.—Messrs. I. W. Adamson, M.R.C.V.S., J. F. Bolton, B.V.Sc., M.R.C.V.S., and A. G. J. Stubbins, M.R.C.V.S., have been appointed to the permanent staff as Veterinary Officers and will be stationed at Hamilton, Trowbridge and St. Edmunds respectively.

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R.C.V.S. Obituary

Brown, Pauline Margaret, M.R.C.V.S., The Vineyard, Abingdon, Berks. Graduated London, July 5th, 1943. Died August 7th, 1953.

J.W.H.H. writes:—

"The news of the sudden death of Mrs. P. M. Brown, M.R.C.V.S., has come as a sad shock to her many friends. She combined clinical skill with grit and determination, and I recall how well she showed these attributes when a few months after qualifying she managed the Abingdon practice single-handed during the fatal illness of Barry Catmur. She was always bright and cheerful and was a charming hostess. It has been my good fortune to have her as a neighbouring colleague and friend, and now we are all going to miss her very much."

Coull, David, 39, St. Thomas's Road, Brentwood, Essex. Graduated Edinburgh, July 16th, 1924. Died August 5th, 1953: aged 63 years.

Mr. David Coull, who succumbed to coronary thrombosis, was a native of Banffshire. He practised there, in Buckie, until 1934, commencing his practice in Brentwood 18 years ago. He leaves a widow, two daughters and two sons, with whom deep sympathy is felt in their bereavement.

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Association of Veterinary Teachers and Research Workers

Visit to Rothamsted Experimental Station, Harpenden

Some 25 members and visitors spent a pleasant and instructive day when they visited the above Institute on July 17th. This is probably one of the oldest institutes of its kind, having its origins as far back at 1843, when Sir John Lawes, living at Rothamsted House, which is now a hostel for members of the Institute, started experimental work on his surrounding farm, and compiled a detailed set of records which are available to-day and constitute a unique series.

The Institute, now largely under the governorship of a Trust working in close association with the A.R.C., was originally financed out of the profits made on fertilisers, especially superphosphate, which Sir John Lawes made and popularised.

The morning was spent touring the pastures, which included the famous Broad balk area where wheat has been grown in distinct strips continuously for over 100 years. The various strips were inspected and the quality and nature of the growth discussed in relation to the manurial treatment received. Some strips had received no fertilisers and lagged behind the others in respect of certain qualities such as size of head, length of stem, and resistance to "lodging." It is interesting to note, however, that with the introduction of a bare fallow the discrepancies in the above respect between the various strips have become less noticeable, an improvement which it is thought may be associated with the better aeration of the soil and its effect upon the bacterial flora. The variety of the wheat used is Squarehead Master purchased yearly in the open market. Whilst those in charge of the experiments do not believe that seed grown serially on the same ground ultimately loses its power of germination, this criticism has been levelled at their experiments and plans have been made to cover this point in the future. Of recent years other problems have arisen and are being investigated, such as the significance of deep and shallow ploughing, the value of a fallow and the effects of cryllium and the soil structure.

One particularly interesting portion of land was observed which had been set aside for many years to allow the natural vegetation to have its way. The type and nature of the competition between the plants has been observed over the years. In this area there is still a trace of the original wheat, though it is of very poor quality. One portion of this "wild reserve" had returned to primitive forest with a heavy cover of thorn, ash and elm.

The afternoon session was spent in the Institute itself, when three specific problems were discussed, namely, (*a*) plant viruses, (*b*) soil microbiology and (*c*) the significance of certain nematodes in the soil. Dr. Kleczkowski indicated the difference between plant and animal viruses, discussed their method of transmission from plant to plant by mechanical inoculation or via insect vectors, and interested the audience by referring to serological tests using rabbits and plant antigens and how this method

could be extended to provide cross protection tests for the identification of certain viruses. Some plants may carry a virus and show no symptoms. Viruses mostly live a parasitic existence in insects and appear harmless to them. When asked whether manurial treatments were beneficial he pointed out that whilst stimulating crops to greater growth there was a tendency to increase susceptibility. Miss Crump opened her remarks by discussing the three main groups of organisms present in the soil, namely, bacteria, protozoa and the actinomycetes. The soil flora was remarkably stable under most conditions and very difficult to alter; the soil was, in fact, very conservative. The sterilisation of soil by steam, formalin and chloropicrin radically altered the picture, however. The chief effect of such treatment was greatly to lower the number of bacteria and to leave behind a small population of tolerant organisms which ultimately built up to a maximum and prevented the original flora from being re-established. The influence of artificial and farmyard manures was discussed, and the speaker expressed some apprehension regarding the wide use of weed sprays.

Mr. Fenwick indicated that the majority of parasitic nematodes were free-living, a few being saprophytic in decaying vegetation. He emphasised the value of a complete morphological study as providing a primary basis for subsequent work. Mr. Fenwick discussed at some length the life story of the potato eelworm, as this was a parasite only slightly less important than potato blight: 40 to 55 per cent. of seed carried viable cysts. He emphasised the need for crop rotation in keeping soil infestation relatively low, and finished up by expressing scepticism regarding the chemical control of parasites. Many of these agents stimulated increased growth of the plant, but, in fact, provided more food for the surviving parasites, which were presumably the resistant ones.

The visit was greatly enjoyed by all present and a vote of thanks was conveyed by the President, Dr. Lovell, to those who had kindly entertained the Association.

N. S. B.

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ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

FOOT-AND-MOUTH DISEASE:

Devon.—East Arson Farm, Ashreigney, Chulmleigh (Aug. 6).

ANTHRAX:

Derbys.—Wheeldon Trees Farm, Earl Sterndale, Buxton (Aug. 6).

Norfolk.—Weasenham Farms Ltd., Weasenham, King's Lynn (Aug. 3).

Renfrews.—Burnside Farm, Langbank, Port Glasgow (Aug. 3).

Suffolk.—Lower Friesland Farm, Burnt Fen, Mildenhall, Bury St. Edmunds (Aug. 4).

Yorks.—Firtree Farm, Pollington, Goole (July 31st).

FOWL PEST:

Cambs.—Home Farm, Cambridge (Aug. 1); Mayfield House, Quy, Cambridge (Aug. 4).

Cornwall.—Great Wood, Mylor, Falmouth (Aug. 1); 2, Trenwith Bridge, St. Ives (Aug. 6).

Derbys.—11, Greenhead Park, Bamford, and Church Hotel, Edale, Sheffield (Aug. 4).

Flints.—Mertyn Abbot, Whitford, Holywell (Aug. 8).

Lincs.—High Leas, Knipton, Grantham (Aug. 1).

Suffolk.—Church Cottage, Little Wratting, Haverhill (Aug. 1).

Yorks.—21a, Hooton Roberts, Rotherham (Aug. 1).

SWINE FEVER:

Angus.—Stracathra Airfield, Brechin (Aug. 6th).

Beds.—Ruislip, Moss Lane, Elstow, Bedford (Aug. 5); 61, High Street, Arlesey (Aug. 6).

Cambs.—Shelton's Piggeries, Lode Way, Haddenham (Aug. 8).

Cornwall.—Castle Farm, Callington (Aug. 7).

Essex.—Highfields Farm, Daws Heath Road, Rayleigh (Aug. 6).

Herts.—Belvedere Farm, Essendon, Hatfield (Aug. 6).

Lancs.—Bromhill's Farm, Clayton-le-Moors, Accrington; White House Farm, Mayhill (Aug. 7); Tarnley Piggeries, off Rock Lane, Habengham Eaves, Burnley (Aug. 6).

Leics.—Blackbrook Farm, Loughborough (Aug. 5).

Lincs.—Old Fen Dyke, Sutton St. James, Spalding (Aug. 5); Sailors' Home, Old Leake, Boston (Aug. 8).

Midlothian.—Borrowstoun Farm, Bo'ness (Aug. 7).

Norfolk.—"Tynecot," Grove Avenue, Nr. Costessey, Norwich (Aug. 6); Broad Farm, Tleggburgh, Great Yarmouth (Aug. 7); Stratten Strawless Home Farm, Stratten Strawless, Norwich (Aug. 8).

Perth and Kinross.—Warde of Goodie, Thornhill, By Stirling (Aug. 8).

Salop.—Smallholding, Shepherd's Lane, Bicton Heath, Shrewsbury (Aug. 5th).

Somerset—Little Creech Farm, Bathpool, and Tideoak Mills, Bishop's Hull, Taunton (Aug. 7th).

Staffs.—Holbeach Farm, Kingswinford, Brierley Hill (Aug. 6).

Suffolk.—Moat Farm, Henstead, Beccles (Aug. 6).

Surrey.—Grayland's Farm, Wood Street (Aug. 6); Pond House Pig Farm, Castle Grove Road, Chobham (Aug. 8).

Sussex.—Berwick's Field, Steyning (Aug. 6).

Yorks.—Cook Street Piggeries, Bentley, Doncaster; Hill House Farm, Pildacre, Ossett (Aug. 8).

LEGAL NOTES

FARMERS PLEAD "GUILTY" TO NEGLECTING COWS

In its issue of July 24th the *Aldershot News* reports that at Odiham Magistrates Court Major Walker John Long and his son, Dennis Keith Long, of Mooring's Farm, Crondall, pleaded guilty to causing unnecessary suffering to three cows by unreasonably omitting to provide them with proper and necessary care and attention, between April 27th and May 5th.

Announcing that the defendants would be fined £25 each, with four guineas costs in each case, the presiding magistrate (Mrs. Humphreys-Owen) said the bench thought this was a very serious case of great neglect. The fact that Major Long had been farming for so many years made it even more serious, and the court had considered the question of imprisonment.

Mr. Gordon Jones, who prosecuted for the R.S.P.C.A., described the case as one of "lamentable animal management which caused a considerable amount of suffering to the unfortunate animals concerned." He said that on May 5th a visit was paid to Mooring's Farm and an examination was made of the stock. Three cows, the subject of the present proceedings, were found in a cowshed and were in a horrible state. These cows were lying down and were obviously extremely ill. They were grossly emaciated and were so weak that they were quite unable to rise. It was obvious that some were suffering from more than disease. On one cow were extensive bedsores and on another was a wound caused by a dislocated hip joint. A veterinary surgeon was called in and the three animals were destroyed on the spot. A *post-mortem* examination was made, showing that almost every functional organ was diseased, including tuberculous infection of an udder in one case. These affections were of considerable standing.

Mr. Jones said he was submitting that both defendants were extremely remiss in not calling in a veterinary surgeon or taking reasonable steps to treat the animals themselves. Major Long stated at the time that he thought the animals had suffered from some spinal trouble after calving, that they had been down about a week and that he did not call in a veterinary surgeon.

"UNUSUAL CIRCUMSTANCES"

Mr. J. M. Beach (for defendants) said that in fairness to them he must tell the bench at some length the history of these animals because the circumstances were rather unusual. At the onset he would ask them to bear in mind that Major Long had been a farmer for 33 years. Mr. Beach said he thought it was accepted practice among farmers that if an animal had a temperature a veterinary surgeon was called, and he asked them to accept as a fact that in the first instance these three animals had no temperature. They were three of 14 cows kept in a War Department field from the end of March. These cows were all in calf. There was a large ditch in the field and on April 20th the three cows, "Peggy," "Judith" and "Duchess," with others got into this ditch. "Peggy" was badly caught in the ditch and ropes had to be used to get her out. There was no doubt that a short tree stump caused one of the original injuries as she was being hauled out. She was taken back to the farm buildings and placed in a stall and successfully calved about two days later. It was true to say that at this stage defendants did not call in a veterinary surgeon until the day the R.S.P.C.A. inspector called, but defendants, particularly Major Long, had a wide experience of animals, and each cow was given drenches. Mr. Beach said he asked the bench to accept as a fact that when a cow was in calf diseases were very largely concealed by pregnancy. He also asked them to accept that diseases, particularly liver fluke and tuberculosis, were wasting diseases which were precipitated by calving. Veterinary dressings were placed over "Peggy's" bare patches, which were caused by the ditch incident. On the day before the inspector called it was apparent to Major Long that these animals would have to be destroyed as they had wasted very rapidly and obviously were not going to be of any use as stock. The slaughterer's lorry called on May 4th and collected two cows, not the subject of this charge, and on that occasion Major Long mentioned that the other three animals were to be slaughtered. These cows were well fed and well watered and he suggested that defendants

were guilty at the most of not having them treated a little earlier. He agreed that defendants should have obtained assistance earlier, and they did telephone their own veterinary surgeon on the morning Inspector Negus called.

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Rubber-banding of Cow's Teats: Decision Upheld.—At Essex Quarter Sessions fines of £2 10s. each imposed on a Devon farmer and his wife by Exeter Magistrates for causing unnecessary suffering to a cow (*Vet. Rec.* **65.** 309) were upheld by the Recorder (Mr. H. H. Flam) when the couple appealed against their conviction.

The appellants were Major Wilfred Hampson and his wife, Margarette Millicent Elizabeth Emily Hampson, of Greenslade, North Tawton. When they were fined in April, it was alleged that they caused suffering to a cow they were taking for sale at Exeter Market by unreasonably constricting the teats with rubber bands. Their explanation was that the cow had been letting down her milk when being transported, that they used the bands to keep her in milk when she got to the market; and that they did not consider any pain was caused.

Dismissing the appeal last week, the Recorder said, "It is not suggested and never has been that either Major or Mrs. Hampson ever for a single instant intended any cruelty to the animal, but I am satisfied there was some pain and that it was caused without any reasonable object."

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Dishorning of Cattle Prosecution in Eire.—"The services of a veterinary surgeon were not yet around that area for such operations," said the advocate (Dr. Dowdall) of one defendant in a case at Castlepollard Court in which James Flynn, of that town, was charged with dishorning a bullock, aged two and a half years, in a manner contrary to the provisions of the Cruelty to Animals Act, 1919: Patrick Cooney, Mooretown, owner of the bullock, was charged with permitting the offence.

In its report of the case the *Meath Chronicle* (May 23rd) records that Garda McIntyre stated he saw Flynn in the act of performing the operation of dishorning the animal. He saw one of the horns cut off. He also saw a clippers, a scissors and a saw. Witness told defendant he could not do a thing like that without the use of an anaesthetic. He replied that the way he was doing it was just as good. There was much blood. The animal was tied up and a couple of men were holding it. Dr. Dowdall said Mr. Cooney knew nothing about it, adding the observation quoted above. The Justice said he heard a number of such cases from time to time. Some veterinary surgeons, he said, held there was no pain, while others said the opposite. He would apply the Probation Act in this case.

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Adulteration of Milk not "Trivial."—At a recent hearing in the Queen's Bench Division, the Court (the Lord Chief Justice, Mr. Justice Parker and Mr. Justice Donovan) held that the adulteration of milk, even though after adulteration the milk was still good milk, was not a "trivial" offence, and allowed an appeal by the prosecutor from the dismissal by Montgomery justices sitting at Machynlleth of informations under Section 3 of the Food and Drugs Act, 1938, alleging that Mr. Alfred Lewis Jones, of Llwyn Farm, Penegoes, Montgomery, a dairy farmer, unlawfully sold to the prejudice of the purchaser, the Milk Marketing Board, milk which was not of the quality demanded by the purchaser.

It was proved before the justices that on December 10th, 1952, milk purchased from a retailer supplied by the defendant was found, on analysis, to contain 7·7 per cent. solids (not fat) and added water to the extent of 9 per cent. of the bulk, and that milk purchased from the defendant on December 12th contained 4 per cent. water, 4·4 per cent. fat and 8·2 per cent. solids (not fat).

The justices were of the opinion that the defendant, by his failure to call evidence, had failed to prove that the milk complained of was in the same state as it came from the cow, but were of opinion that both charges should be dismissed since it had been proved to their satisfaction that the milk in question was of very good quality and that the presence of water in the quantities proved did not make it prejudicial to the purchaser. In view of Banks *v.* Wooler ((1900) 81 L.T. 785), in which it was stated that the bench would have been justified in dismissing the case when there was 10 per cent. of water, they were of opinion that the informations should be dismissed.

Judgment

Mr. Justice Parker, giving judgment, said that there was ample authority for holding that when a purchaser did not get what he demanded, in this case genuine milk, the sale was to his disadvantage. The justices had held that because the milk was good the offence was trivial and they were entitled to dismiss the informations. Banks *v.* Wooler was decided in 1900 under the Act of 1875 long before the Milk Regulations of 1939 and the Criminal Justice Act, 1948, and the charge was dismissed under Section 16 of the Summary Jurisdiction Act, 1879, which empowered justices to dismiss a summons where the offence was trivial. Whatever was thought in 1900 as to the selling of adulterated milk, speaking for himself, it seemed to him that any adulteration of milk to-day was far from being a trivial offence. Under the Criminal Justice Act, 1948, the justices could, if they considered it trivial, have granted either a conditional or an absolute discharge after finding the offence proved. They had confused matters of defence with matters of mitigation. The case should go back to the justices with a direction to convict.

The Lord Chief Justice agreed. He said that if an offence was proved justices must now convict under the Act of 1948. He could not agree that, if he were to buy milk and was sold milk and water, that would be a trivial matter. Offences with regard to the selling of adulterated milk could not be regarded as trivial merely because the purchaser got the fat content to which he was entitled.

Mr. Justice Donovan delivered a concurring judgment.

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Battery-kept Hens Killed at Market.—In a recent case reported by the *East Anglian Daily Times*, the Banbury (Oxon) magistrates were informed by R.S.P.C.A. Inspector M. Waite that 22 hens for sale at Banbury market were "typical examples of birds which had worn themselves out through battery treatment."

Norman D. Summerton, of Dell Farm, Shalstone (Bucks), was summoned for exposing the hens for sale on June 4th when unfit and likely to be caused unnecessary suffering, and the owner, 18-year-old Mary Emily Richardson, was summoned for permitting the exposure for sale. Mary Richardson was fined £12 and ordered to pay four guineas costs, and Summerton was fined £10 with two guineas costs.

The prosecution alleged that the hens were in an advanced state of debility. Four were comatose, and others had no neck or breast feathers. Some were so weak their bodies were underslung.

Mr. H. C. Slinger, veterinary surgeon, of Banbury, said he ordered the birds to be destroyed. Inspector Waite had told the court he thought the condition of the birds was the result of the battery system at an extreme stage.

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LIVESTOCK EXPORT GROUP

In its report for the quarter ended June 30th, 1953, the Livestock Export Group states that trade is gradually reverting to normal, but there are still obstacles hindering it from achieving a faster tempo and these the Group is striving to remove.

The extension to the Glasgow Quarantine Station is now ready and the second shipment to Canada from Glasgow since Canada raised her embargo two months ago was made on July 17th. It is hoped that Canada will shortly allow the resumption of imports of stock for the U.S.A. through Canadian ports, and that she will also permit animals from England and Wales to be sent direct to the Glasgow Quarantine Station without their having to remain in Scotland for 60 days. The latter relaxation would greatly assist Canadian importers, particularly breeders of pigs and sheep.

Shipments of stock to New Zealand may possibly be delayed, though it is hoped to no great extent, owing to difficulties being encountered by shipping companies carrying stock through the Panama Canal Zone. The Group has brought the matter to the notice of the Ministry of Agriculture, who are endeavouring to resolve it.

Stock may, of course, be shipped via The Cape, but sailings of cargo vessels by this route are irregular.

The Panamanian Regulations

It would appear from reports reaching the Group that regulations introduced in 1951 and still in force in regard to live animals passing through the Canal Zone are not generally known and are therefore mentioned below for the information of breeders and exporters.

The Panamanian regulations require all stock from Great Britain to be accompanied by (*a*) a certificate signed by a Local Veterinary Inspector of the Ministry of Agriculture and Fisheries to the effect that animals are free of foot-and-mouth disease and rinderpest, and (*b*) a certificate from the Ministry of Agriculture and Fisheries Animal Health Division, that the area where animals have been located has been free of these diseases.

Export Licences

Following representations by the Group regarding details to be submitted when applying for an export licence for cattle, sheep or pigs, the Board of Trade state that, in future, applicants need only supply details of the breed (and name of breeder in the case of Scottish breeders only), sex, number and value of the animals concerned.

LIVESTOCK IN ENGLAND AND WALES

The provisional results of the June 4th, 1953, agricultural census show, in comparison with June, 1952, that the female breeding herd of cattle (consisting of cows and heifers in milk, cows in calf but not in milk, and heifers in calf with first calf) has increased by 27,000 head (less than 1 per cent.). Calf numbers have increased by 106,000 (7 per cent.) with a higher percentage increase for male calves. Total sheep and lambs have increased by 482,000 (3½ per cent.). The total increase in pigs (106,000, or 3 per cent.) includes increases of 13 per cent. and 50 per cent. in sows in pig and gilts in pig respectively. The decrease (18 per cent.) in "other pigs, five months old or over" is due primarily to the current tendency to market pigs at lower weights. Adult fowls have increased by 242,000 (1 per cent.), but fowls under six months have decreased by 703,000 (2 per cent.). Turkeys have increased by 15 per cent.

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ORGANISATION OF AGRICULTURAL RESEARCH

Lord Rothschild's Criticism

Lord Rothschild, Chairman of the Agricultural Research Council, speaking at the jubilee celebrations of Long Ashton Research Station, on Wednesday of last week, referred to the need to classify the approximate order of priority of short-term problems. It was not known whether eelworm cost the country more than mastitis, or whether mineral deficiencies cost more than pneumonia in pigs, bracken or blight in potatoes. The classification could best be dealt with by a central organisation and he hoped that answers to the questions so far as the main agricultural commodities were concerned would be available within two years. "Even as far as we have got already in tackling this problem of priorities, it has become clear that in terms of the annual values of our principal agricultural commodities our research work is exaggerated in some fields and inadequate in others," he continued. "This can be rectified, but it will need public-spirited co-operation from our research institutes throughout the United Kingdom.

"The Treasury, which controls our expenditure on agricultural research, is likely to be more sympathetic to our continually increasing demands if we can say that work is of direct and immediate importance to the country in increasing the efficiency of national food production."

In a reference to the structure of what he described as the agricultural intelligence service, Lord Rothschild recounted the multiplicity of controlling agencies and continued: "One cannot escape the conclusion that the present organisation of agricultural research in this country is clumsy, irritating, and ripe for rejuvenation.

"One result of bad organisation is that it fosters a comparatively new but virulent disease in British public life, the committee system." During the last 12 months the Agricultural Research Council had liquidated four of its 36 committees and would pursue the policy. A formidable group of scientists were now working for the Agricultural Research Service, which now obtained all it needed from pure science.

Lord Rothschild surveyed major achievements by research workers in Britain and commented that results of work on grass yields and conservation had a profound effect on British agriculture and could have more profound results if present knowledge was applied. The country's dairy herd could be fed in summer on half the acreage now used for the purpose.

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AGRICULTURAL AID FROM U.S.A. COUNTERPART FUNDS

During the next three years Agricultural Departments of the United Kingdom are to spend £625,000 of counterpart funds derived from United States economic aid on projects designed to increase agricultural productivity. This is part of the total sum of about £3,000,000 that is to be spent by the Government on stimulating productivity of all sections of industry in this country. Particulars of the programmes under which these arrangements are to operate are contained in the White Paper (Cmd. 8918) entitled "Programme of Expenditure of Counterpart Funds Derived from United States Economic Aid."

The Advisory Services allocation includes a campaign to encourage milk recording in England and Wales (£40,000); pilot scheme for cattle project on hill areas (Scotland) (£2,000). The allocations for economic research and promotion of studies include: survey of prevalence, etc., of livestock diseases (£25,000); pig recording (£14,000); livestock management survey (N.I.) (£12,000); post-graduate scholarships (£25,000).

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the B.V.A.

VETERINARY TEACHING

Sir,—Mr. Simons' letter of May 30th, 1953, brings to mind a factor which, in my opinion, has been completely disregarded in the past. I refer to the question of a lecturer's ability to impart his knowledge.

It is perfectly true that the university or college teacher is appointed primarily on his academic record, and not on his ability as an instructor. In other words, he may possess the required knowledge, but he lacks the ability to impart it.

It may be that a lecturer is not aware of his shortcomings in the lecturing field. A tape recording machine permits the instructor ample opportunity to hear himself as others hear him. The results of such a self-analysis are sometimes surprising and illuminating.

Another method is known as the Faculty rating. This is a rating of the instructor, done by the students in his class and it is conducted by the Director of the Counselling Centre in the college. The rating applies to every facet of the instructor's being; from fairness of assignments to knowledge of his subject, use of English, discipline, sense of humour, etc., etc. If any man considers himself a top-grade lecturer, let him take one of these ratings. The results, again, can be very illuminating. One thing it does accomplish is to show the lecturer where he is deficient. He can then apply the remedy.

It is my belief that few people are born public speakers. They must learn in the hard school of experience, or they may take training to overcome the existing handicaps.

There is no more critical audience than a class of veterinary students. My sympathies are with the newly appointed lecturer walking into a class full of students to deliver his first lecture.

Now that the British Veterinary Colleges and Universities are in closer association, it may be possible for young lecturers to take classes in subjects which will help them better to achieve their purpose of imparting knowledge. A course in speechcraft helps even the most astute lecturer.

There is an organisation known as Toastmasters International, which is a non-profit organisation with clubs numbering over 1,300 throughout the United States, Canada, Hawaii, Scotland and South Africa. In these clubs the members "teach themselves to speak on their feet." I can testify to the benefits which a person receives while a member of this organisation.—Yours faithfully, F. J. Milne.

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ACID-FAST BACILLI IN MILK

Sir,—In his address on "Recent Developments in Veterinary Practice" (*Vet. Rec.*, August 8th), Dr. Wooldridge refers to a discrepancy in the findings of Maitland and Williams Smith when examining milk samples by microscope for the presence of tubercle bacilli. The former found no false positives, while the latter found 8·3 per cent. of samples contained acid-fast bacilli which were not tubercle bacilli although resembling them morphologically. There is a possible explanation for this. As mentioned in the address, Stuart and Harvey have shown that acid-fast saprophytes when introduced into the udder in an oil/wax medium can become pathogens and cause a mastitis clinically indistinguishable from tuberculosis of the udder. Maitland's article, although published in 1950, apparently refers to work carried out in 1938-39 *before the advent of mastitis therapy by means of agents suspended in an oil/wax base.*

In the discussion following the address, Mr. Steward, in referring to the works of Williams Smith and Stuart and Harvey, says, "in both instances a study of the cytology of the milk should enable one to recognise the true position." This is an important observation.

Stuart and Harvey say that microscopically these saprophytes were indistinguishable from tubercle bacilli in some fields; in other fields only very minor differences could be detected.

Describing the cellular picture they say "endothelioid cells, occasionally in groups, were seen."

I would be grateful if Mr. Steward would describe the distinguishing cytological features which he has in mind.—Yours faithfully, J. Deans Rankin. *August 8th*, 1953.

Advertiser's Announcement

On application, Ilford Limited, 104, St. Albans Road, Watford, Herts, will send details of a programme of instruction in radiography and radiographic procedure for veterinary work, to be given at their Department of Radiography and Medical Photography, Tavistock House North, Tavistock Square, W.C.1, on November 5th and 6th, 1953.